

## Northern Wisconsin, a hand-book for the homeseeker

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NORTHERN WISCONSIN

A Hand-Book for the Homeseeker by William A. HENRY *Dean of the College of Agriculture, University of Wisconsin*, and assistants

In accordance with Chapter 311, Laws of 1895

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Copies of this Hand-Book will be sent to any person desiring the same upon request to Secretary State Board of Immigration, Rhinelander, Wis.

By NOV 7

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This view shows a beautiful hard wood forest near Butternut, Ashland county. The central figure is a yellow birch, raising its branches almost 100 feet in the air. So still was the air when the view was taken that the outlines of the maple leaves hanging fifty feet above are plainly revealed.

There are in Wisconsin more than five thousand miles of trout streams. Our view shows one day's catch of rainbow and speckled trout May 1st, 1894, by three fishermen in Waushara county. Forty-two trout weighed sixty pounds.

### **Introductory.**

The possibility that northern Wisconsin may some day become an agricultural region of excellence and prominence is little realized and less recognized anywhere, even by the people of our own state. Knowing somewhat of its true worth and believing that the time had come for the development of this region into a farming community, the friends of northern Wisconsin secured from the legislature of 1895 an act providing for the preparation of a Hand Book by the College of Agriculture. The first section of this act reads as follows:

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"The dean of the College of Agriculture of the University of Wisconsin is hereby authorized and directed by and with the aid of his assistants, to prepare a bulletin or hand-book describing the agricultural resources of Wisconsin, especially thee newer and more thinly settled districts, with reference to giving practical helpful information to the home-seeker. This book shall describe the climate, soils and agricultural characteristics of this region; it shall give help and counsel in pointing out the crops best suited to the various sections, and the agricultural industries in which the people can wisely and safely embark. It shall contain information relative to the location and prices of the cheaper lands and how they may be obtained by the settler. In general it shall set forth the advantages of the newer portions of this state for those seeking homes on lands in the effort to draw to Wisconsin a desirable class of farmers."

In compliance with the above legislative act, every county in northern Wisconsin was visited during the summer and fall of 1895 by the writer or one of the following assistants: F. H. King, Professor of Agricultural Physics; E. S. Goff, Professor of Horticulture; J. A. Craig, Professor of Animal Husbandry; and F. W. Woll, Assistant Professor of Agricultural Chemistry, all of the Agricultural College.

Our attention was particularly directed to observing the character and adaptation of the soil to agriculture and the water supply; the crops as they grew in the fields, and clearings of the settlers were carefully examined and many views taken of them by the aid of our photographer, Mr. H. J. Perkins, of Madison, whose artistic views we are sure will be highly appreciated by all the readers of the Hand Book. The herds and flocks of domestic animals wherever found were studied so ascertain whether farm animals would so thrive in this region that we could recommend it for certain particular line of animal husbandry.

Without any attempt at exactness we have assumed in this Hand Book that northern Wisconsin embraces that portion of our commonwealth lying above a line drawn from Green Bay to Hudson. It was found that at several points along 'such a line the country is already quite well advanced agriculturally, while at others, notably in parts of Clark and

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Wood counties, agriculture is still in a primitive condition owing to the heavy hardwood which once entirely covered those sections.

### **PLAN OF WORK.**

It was at first planned to describe the agricultural features 2 of the several counties separately and in detail, but when it was found that each county could be given only two or three pages of printed matter we realized that nothing satisfactory to us or creditable to the counties could be accomplished by this method; accordingly it was decided to treat northern Wisconsin as a whole, ignoring for the most part of county boundary lines, which are political, after all, and have no significance in considering agricultural features. By adopting this plan of presentation we believe that we are able to give much more real information and helpful counsel to the homeseeker than is possible in any other way. Moreover, by following this plan we have not interfered with the local efforts of the several counties in advertising their special advantages, but, rather, we have prepared the way for such county pamphlets or hand books, as have been, or will be, issued by the various county boards of immigration.

It will be understood, then, that the aim of this Hand Book is to furnish general information and counsel, and to draw the attention of the citizens of our own and other states to the advantages of northern Wisconsin for farming purposes; having secured an audience, we turn it over to the various county immigration bureaus, which are in position to give further information as to the local advantages of the various sections in the new north.

### **CONCERNING THE VIEWS IN THE HAND BOOK.**

This is an age of pictures. Often a single view tells more to a person seeking information on some subject than a whole page of worded description. We have made this a picture-book, sparing neither time nor labor in gathering from all over northern Wisconsin views which are characteristic and representative of the agricultural features of that region. We believe that when our readers have studied these views and read the legends



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accompanying them, they will have as correct an idea of the present agricultural conditions of northern Wisconsin as is possible for one to obtain without actually visiting the country and studying the subject in person. These pictures stand for whole chapters on the vital questions of the fertility of the soil in northern Wisconsin, what crops can be grown there, the present stage of agricultural development, and many other points of the highest importance to homeseekers.

The season of 1895 was remarkably favorable to crops in this region and, with the exception of hay which was injured all over the northwestern states by the May freeze, they were undoubtedly the largest and the finest ever grown there. In taking our views it was but natural that we should select the best fields and gardens for subject and in these to train the camera along the best and finest parts. It is only human nature to make the best showing possible, and we believe our readers will not hold us guilty of any wrong doing if, in presenting views to them, we have shown the best of the marvelously fine crops found growing by us in northern Wisconsin during the season of 1895. It should be said, however, that so universally good were the crops that often it was perplexing to know which field to select for our view.

There has never been anything approaching a total failure of crops in northern Wisconsin, and while another year may not show oats quite so tall, wheat stems quite so long, or the potatoes quite so larger, or so numerous in the hill, yet such crops as are depicted in

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DAIRY BUILDING. LIBRARY HALL. SCIENCE HALL. CHEMICAL LABORATORY.

The University of Wisconsin, one of the great state Universities, has always stood close to the people of the state and is justly their pride. There are thirteen buildings on the campus devoted to instructional purposes; our view shows four of them. The property of the University stands on the books at about \$2,000,000. Its student number about 1,600

and instructors 100. For research, instruction and improvements, the University spends about \$400,000 annually, its support coming jointly from the state and the United States.

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this Hand Book can and will practically be duplicated in future seasons on thousands of farms at the north.

### **EXPLANATION OF THE VIEWS.**

Every view of field crops or farm scenes presented in this Hand Book was taken by our photographer, employed for this special purpose, under the immediate supervision of the writer or some representative of the Agricultural College, and we vouch for their entire accuracy, as stated in the legends appearing under them.

Necessarily many more views were taken than are here presented; in the selection of pictures we have endeavored to present to our readers such scenes as will aid in giving them a good general understanding of the present agricultural conditions of northern Wisconsin. Care has been taken not to duplicate the subjects of the views to any marked extent, but rather to cover the whole range of farm objects in the series presented. Northern Wisconsin is so much alike in its agricultural features from one side of the state to the other that, having presented a view of some one subject, the reader may understand this stands in most instances for the whole region. For example, having shown a bee farm in Polk county and a barley field in Oconto county, the reader may properly conclude that bee farming or barley raising may be followed anywhere in the whole region.

Besides the crops of the fields, we have endeavored to show something of the great forests yet covering large areas in the north where they stand in all their primeval grandeur with their wealth of timber yet unharvested. We have also given views showing how in many cases parts of these forests have been ruined by fire and wind; such scenes are not pleasant to contemplate, but they are shown because the settler will find many such devastated sections depicted, and it is our duty to give him this information so that he may

know in advance what he shall see when he comes, and thereby be not misled. We have also given views of the homes of pioneer farmers, showing the log cabin and the house that comes later on, when substantial improvements are being made. In general, we have endeavored to picture northern Wisconsin faithfully so that any one traversing this region, into whose hands this book may fall, will agree that we represented it fairly and impartially, having set forth its various features just as he finds them.

### **VIEWS OF THE CITIES.**

The city and the country have mutual interests, and the wise farmer looks carefully to good local markets and the many other advantages accruing from proximity to good, thriving cities. Accordingly, though this is an agricultural book, we have deemed it wise to introduce a limited number of views of our northern cities and towns in order to give the homeseeker an idea of what he shall find in this direction. The city views are not our own productions, but from photographs kindly furnished by citizens of the places shown.

The purpose of this book, as designated by law, is not only an effort to interest possible settlers on our state, but another and higher one, "in pointing out the crops best suited to the various sections and the agricultural industries in which the people can wisely and safely embark." If the settlers of northern Wisconsin shall undertake the civilization of the right crops in the right manner and the production of those agricultural staples

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Normal Schools of Stevens Point, River Falls and Superior. —These schools are supported by the state for the purpose of preparing teachers for the public schools.

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to which the region, climate and soil are adapted, and for which there is a paying market demand, then prosperity will attend their coming from the day they set foot among us. Much of this Hand Book is devoted to a consideration of the crops and industries adapted

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to this region in the hope that the settler will be started right in the very beginning of his efforts.

### **ACKNOWLEDGMENTS.**

In gathering material for this Hand Book we have been aided in numberless ways by good citizens in every county represented, and still others interested in the development of northern Wisconsin. These people have opened up every avenue of information and made the acquirement of knowledge an easy possibility and our efforts a pleasant task. Our findings are far more complete than they could possibly have been, had we labored alone. Acknowledgment is hereby made of all these good offices and aids, and our earnest wish is expressed that this Hand Book may fulfil in some fair measure the desires and expectations of our many friends who have labored with us for its success.

### **THE PURPOSE OF THE HAND BOOK.**

If this Hand Book shall be an instrument in removing the great ignorance and even prejudice which prevails in the southern half of our own state concerning the agricultural possibilities of northern Wisconsin, and if it shall convey to our people and those of other states and countries a true acknowledge of this region, much good will have been accomplished. There is already a goodly tide of settlers flowing into northern Wisconsin; if it accomplishes its designed purpose this book will swell the number materially, bringing to us an intelligent, worthy class of people who are posted in advance on the kind of country they are coming to and who, knowing this, are not likely to leave us disappointed after a few years' stay. Furthermore, these people, if guided by our Hand Book, will embark in agricultural industries which are remunerative to themselves and tend to the best interest of our commonwealth.

With farms supplanting the forest northern Wisconsin will not revert to a wilderness with the passing of the lumber industry, but will be occupied by a thrifty class of farmers whose

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well directed, intelligent efforts bring substantial, satisfactory returns from fields, flocks and herds. W. A. HENRY, Dean College of Agriculture, University of Wisconsin.

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Stout Manual Training School, Menomonie, Dunn Co. High School, Washburn, Bayfield Co. High School, Black River Falls, Jackson Co. High School, Shell Lake, Washburn Co.

The public school buildings in the cities and villages of northern Wisconsin would be creditable to sections of our country many times older and much more developed. We can only show a few of them, which are thoroughly representative. The Stout Manual Training School was erected at a cost of \$45,000, a gift by the Hon. J. H. Stout to his home city.

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### **Wisconsin's Attainments in Fifty Years—Her Offerings to the Homeseeker. W. A. HENRY.**

A prudent person before changing his home location will consider carefully the condition of the community with whom he may be thinking of casting his fortune; he will look for the general signs of prosperity and the gradual increase of property holdings which should characterize a progressive community. He will further be deeply interested in nothing whether his prospective fellow citizens are a law-abiding people, whose intellectual and moral standing keep pace with their material advancement. Wisconsin invites rigid inspection in all these regards, believing that the more closely here statistics are scrutinized and the condition of her people examined, the better pleased will be those conducting the investigation.

### **A FEW STATISTICS.**

Statistics are dry reading at best and we will limit our figures to the smallest number possible, yet those which are presented are of high importance and will surely be read with interest by the thoughtful homeseeker.

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Wisconsin covers 56,040 square miles, or 35,865,600 acres. Her population by the state census of 1895 was 1,937,915, an increase in five years of over a quarter of a million.

Wisconsin stands thee twelfth state in the union in the value of he property.

The wealth of the state is summarized as follows, the data being taken from the report of the United States census for the year 1890:

Value of All Property in Wisconsin in 1890.

Value of real estate, including improvements \$1,098,350,591

Railroads and street railways 294,269,054

Live stock on farms, implements an machinery 82,951,387

Machinery of mills and products 81,874,031

Gold and silver coin 27,934,449

Telegraph, telephone, shipping and canals 14,738,945

Mines and quarries 8,288,551

Miscellaneous 224,801,515

Total value of all property in the state \$1,833,308,523

All of this vast wealth has been produced from our soil, forests, mines and waters in a period of about fifty years by the people of our state, beginning with a mere handful of settlers.

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In 1890 when the last national census was taken there were, in our state, 10,417 manufacturing establishment employing 132,031 workmen, to whom were paid \$51,833,708 in wages, and turning out products valued at \$248,546,146.

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This view of a district school house taken near Crandon, Forest county, will give to strangers a good idea of the school houses they will find all over northern Wisconsin. The public school system has the hearty liberal support of the people of our whole state. The district school buildings in northern Wisconsin are the equals of those in the southern part of the state in every particular, and are superior to those found in many of the older settled districts of the northern United States.

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There were 6,003 miles of railway in the state in 1890, or 33.6 miles of railway for each 10,000 people.

Our leading agricultural statistics are summarized in the same census as follows:

Total number of farms 146,409

Acres in farms (improved 9,793,931; unimproved 6,994,057 167,787,988

Valuation of land, fences and buildings thereon \$477,524,507

implements and machinery \$19,167,010

Live-stock on hand June 1, 1890 \$63,784,377

Estimated value of farm products 1889 \$70,099,645

### **EDUCATIONAL ADVANTAGES.**

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Wisconsin's greatest glory is her educational system. In the year 1893-4 there stood within our borders 9,078 public school buildings, in which 12,998 teachers taught 308,369 pupils. To pay this army of teachers, the people voluntarily assessed themselves \$4,979,194. To prepare our young men and women for teachers, the state maintains six normal schools and has provided for a seventh. These schools cost the state in 1893-4 \$249,331. The crown of the public school system is the State University at Madison, with a hundred professors and 1,600 pupils, maintained jointly by the state of Wisconsin and the United States at a cost of \$400,000 annually.

In libraries Wisconsin has laid a good foundation. The town and district school libraries number over 130,000 volumes. All the larger cities and some of the villages contain public libraries. The colleges and private educational institutions possess 155,040 volumes. The library of the State Historical Society, located at Madison, numbers 180,000 volumes.

Wisconsin has no public debt, so that all taxes go for local and state expenses and for education by the direct will and vote of the people.

Whoever reviews these statistics must surely become impressed with the belief that Wisconsin is a growing, progressive, wealth-creating community, a commonwealth in which the people believe in intellectual advancement as well as material acquirement.

### **SPECIAL EDUCATIONAL ADVANTAGES FOR FARMERS.**

The farmers of Wisconsin have additional educational advantages not equalled generally and not excelled by any other state in the Union. At the University is located the Agricultural College with its large corps of investigators and instructors. One branch of the college is the Experiment Station, maintained jointly by the United States government and the state of Wisconsin. This Station is constantly studying problems of high agricultural interest and import to our people, and the results of these efforts are embodied in frequent bulletins and the annual report, a volume of over 300 pages, all of which are published by



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a generous state. These reports and bulletins are sent without any charge whatsoever to all farmers in this state who ask for them.

The second line of effort of the Agricultural College is instruction to young men who comes to it for study in matters relating to the farm. The popular courses here are the Short Course in Agriculture and the Dairy Course, both conducted during the winter when young men can best be spared from the farm. Already the interest in this course has grown to such an extent that each winter sees some 200 or more young men

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Court House, Hayward, Sawyer County. Court House, Oconto, Oconto County. Court House, Phillips, Price County.

The public buildings of a community are a good index of the character and purposes of the people erecting them. Our view presents three county court houses of northern Wisconsin. Such buildings plainly show that the people of these counties have faith in their permanency and future development.

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gathered together at the University of receive agricultural instruction, and the attendance is steadily growing.

A third branch of the Agricultural College is the work of the Farmers' Institutes. Each winter the superintendent of Farmers' Institutes holds over one hundred meetings, each lasting two days, in the farming districts of the State. The Institutes are managed by conductors, themselves practical farmers, who bring with them two or three other farmers selected for their successful experience in farm matters. Farmers come to these Institutes for many miles around, to listen to practical addresses upon the farm, topics of the day, and to assist in the helpful discussions which follow each of the papers read or addresses given.

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Wisconsin was the first state in the Union to make a liberal appropriation (\$12,000 annually) for Farmers' Institutes, and our farmers feel that these meetings are peculiarly their own and are proud of their institute system which has given them so much valuable aid.

Besides the large fund of information given out at the Institutes by the trained speakers there are distributed at each of the meetings two or three hundred copies of a book known as the Farm Institute Bulletin. This book is a stenographic report of the last Institute meeting of the preceding year, and contains about 300 pages of the most practical helpful information that can be gathered together for the farmer. Fifty thousand copies of this book are given away to the farmers of Wisconsin each year.

In all the Agricultural College each year distributes gratuitously over 20,000,000 pages of printed matter relating to farm affairs among the farmers of the state.

The prudent homeseeker, casting about for a location, will carefully consider such opportunities as these and count them among his possible possessions along with the land he may secure. He well knows that it will pay to choose his home spot in a farming community which is progressing intellectually and which is taking a lively interest in farm matters and imbued with a full determination to have the best of crops, the best of stock and have none but the best of everything to sell, for all this grants assurance of success for himself.

### **WISCONSIN'S FAVORED PLACE AMONG SISTER STATES.**

Wisconsin is most favorably situated not only for agriculture, but also for manufacture and commerce. Nearly all her territory lies in the Mississippi Valley, which is the garden spot of the world. All about her, as well as within her borders, are great and growing cities. At the extreme northwest on her border is the gateway of Duluth and Superior; on her western border just over the line lies Minneapolis and St. Paul, while within her borders on the

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Mississippi is La Crosse and other cities; southeast just across the line is the metropolis of Chicago; along the eastern border, with the commercial advantages offered by Lake Michigan, we find Racine, Milwaukee, Sheboygan, Green Bay, Menomonee and Marinette; on the northeast are the cities of the iron and copper mines. In the interior of the state are found many prosperous manufacturing centers.

From an agricultural standpoint it is the manifest destiny of Wisconsin to wait upon these great cities with the products of her fields, gardens and flocks, thus insuring our farmers a home market, which is the best market in the world.

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View of a business street in Marinette, Marinette county. This enterprising city has a population of 15,312 to which may be added that of Menominee, Mich., separated only by the Menomonee river, of 12,644. The 9 saw mills of Marinette turn out about 250,000,000 feet of lumber annually; in 1895 there were produced in this city 25,000,000 lbs. of paper and 18,000,000 lbs. of suphite and ground wood pulp. Iron works, soap factory, flour mills and fisheries are among the other industries. The arrivals and departures of vessels of various kinds number over 2,000 annually. The manufacturing and shipping opportunities of this city are unexcelled.

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The state being bounded by Lake Superior on the north, Lake Michigan on the east and the Mississippi on the west, commerce with all the wealth that follows is a heritage so naturally ours that we can never be parted from it. Cities located as ours are, on natural lines of water communication, must become manufacturing and commercial points. Though located far inland because of the great chain of inland lakes we can traffic economically and profitably with distant cities, and the time is not far removed when ships from all lands across the seas will unload their goods at our very doors in exchange for products gathered from hundreds of thousands of farms, tens of thousands of factories, and hundreds of mines in our own and neighboring states.

## **GOOD CITIZENSHIP.**

A close study of our people will show that we are law-abiding, with little or no time left from labors for dissension, bickering and law-breaking. Our commonwealth is a great beehive of industrious workers. Our cities are growing in population and rapidly improving in the character and magnificence of their public buildings, business blocks and private homes. Our railways are multiplying and reaching into every section of the state; in the country districts, wagon roads are being laid out in the newer sections and improved in the older ones. The forests are giving way to the fields with their harvests, herds and flocks, and the marshes are being turned into fruitful meadows. In the southern part of the state farm now touches farm from the borders of Lake Michigan to the banks of the Mississippi; on these homesteads are fields rich with grain or populated with contented wealth-yielding cattle. Great roomy barns hold the abundance of the fields, and the houses of the farmers are large, of good architecture, always comfortably and often handsomely furnished.

As we pass northward in our state find the lands still quite largely occupied with forests with only here and there a clearing. In this district the fields are often decorated by the stumps which tell of the forests of but few years before; log cabins are frequently seen, though more pretentious homes are even now not uncommon. It is to this part of the state that attention is particularly invited.

## **THE SETTLEMENT OF THE WEST.**

For more than 250 years after the landing of the Pilgrims and down to a few years ago no one ever started westward in this country looking for good, rich farming lands and failed to find them. The last great wave of migration, the mightiest of all, carried settlers high up on the plateau flanking the Rocky mountains. A few years of bitter experience has shown these people that the experiment of moving westward to find rich lands for the asking had been tried once too often and that at last there were no more agricultural lands to be given away by the government. This last great demand for new lands was at its height about

twelve years ago. It was hastened and intensified by the action of the railroads which had built their lines far in advance of civilization over the prairies and plains, where they hoped to reap large returns in the great grain crops seemingly near at hand provided there were only people to plant and harvest.

### **NORTHERN WISCONSIN OVERLOOKED BY THE SETTLER.**

When this migration was in progress the people

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Views of mills, factories and docks at Superior, Wis. In 1895 there was shipped from Superior 21,000,000 bushels of wheat; 5,000,000 barrels of flour; 117,000 tons iron ore; 17,000,000 feet of lumber; 51,000 tons of copper, etc., etc. During the same year there was received at Superior 1,500,000 tons of coal; 233,000 barrels of alt; 110,000 barrels of oil, etc., etc. The total freight handled at Superior for the year 1895 amounted to 3,360,000 tons valued at \$65,000,000, an increase over 1894 of \$22,000,000. Superior is destined to become one of the great cities of the Northwest.

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passed by the wooded districts of Michigan, Wisconsin and Minnesota without so much as a thought or a question of their possible present or prospective agricultural value. To clear up a farm from the woods was too slow for them and had too little attraction to people who were planning to make their fortunes by a few years of grain-growing on the great plains of the west. Thousand of Wisconsin people were swept up and carried westward in this great crowd of landseekers, all equally forgetful or ignorant with of other states as to the possibilities of finding good farming lands close at home. So it turns out that country is settled for hundreds of miles west of Wisconsin, while within her own borders there remain great areas of fine land yet unimproved and low-priced.

### **NORTHERN WISCONSIN MISJUDGED EVEN BY THE PEOPLE OF OUR STATE.**

Even yet the value of northern Wisconsin for agricultural purposes is little known and less appreciated by those living in the southern half of the state. This ignorance, so dense and so general among our own people, is not difficult to understand when we look for the cause.

Northern Wisconsin in its primeval state was a vast forest of magnificent timber, portion of which was made up of pine trees possessing high lumber value. The pine timber being available because it could be floated down the streams and valuable because there was an enormous demand for it in the prairie regions of this country as well as the cities, early drew the attention of lumbermen and others, and because of it railroads were built and cities established all over northern Wisconsin in the midst of the forests. Everything in northern Wisconsin in the beginning was viewed from the pine lumber standpoint, and hardwood timber, no matter how excellent its quality or how abundant, received little or no consideration because of the slight demand. Everything from a forty to a country was studied and considered from the pine lumber standpoint, and the agricultural possibilities of the land usually never received a second thought. When the pine was cut off, the land which had grown it, as a rule, received no more thought from the lumberman than the dust of his saw mill, and quite generally he would not even pay the taxes resting upon the land from which the trees had been cut, preferring to use every available dollar in the purchase of other lands which still carried pine trees. The fact that the owners of the land would not pay the taxes after the removal of the pine timber was regarded by people not fully conversant with the facts as incontrovertible evidence that northern Wisconsin would become a wilderness again after the removal of the pine. And thus it happened that everything conspired from the very beginning to divert the minds of the people living in the southern part of the state from ever suspecting that the southern half had a possible agricultural value.

### **DELAYED SETTLEMENT OF THE NORTH HELPFUL TO PEOPLE NOW SEEKING HOMES.**

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Pine lumber, lake commerce and iron mines have brought on an abnormal condition of settlement in northern Wisconsin. If we study the map of our state we observe many lines of railway stretching across its northern portion, reaching in all directions and uniting the many cities on the borders and just outside with each other and with those of the interior.

### MAP OF WISCONSIN

Showing the Density of the Population Census of 1895

By Permission of Henry Casson, Secretary of State

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This view, which we believe our readers will vote the most beautiful and pleasing in the whole book, shows the log cabin home of Mr. N. G. Willard, 21/2 miles north of Sherry, Wood county. Mr. Willard secured 80 acres of unimproved land November, 1894, and our picture represents his work of home building on September 9, 1895. The absence of the "head of the house" will be noticed; he is away working for some neighbor to earn money to supply the immediate wants of the family. When at home he is busy felling trees, cutting saw logs, chopping cord wood, or clearing the ground for the future farm.

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On the shore of Lake Superior, near Bayfield.

If we journey by any of these lines of railway into northern Wisconsin we are conveyed by rapidly moving trains, in comfortable modern coaches, well filled with business-like people who are moving from city to city. If we alight at any of the stations of the larger villages or cities we are surprised at the many evidences of prosperity and permanence visible on every hand. Large, well appointed hotels, fine substantial bank buildings and business blocks, capacious, costly school houses and churches, together with the many well-built residences, all go to convince us that the builders have come to this country to stay.

If we leave these centers of industry and thrift to inspect the surrounding country we are again surprised, but this time in the opposite way. A drive down any of the streets into the country soon brings us to stumps, clearings and wood lands. Here and there are farms, showing by the absence of stumps and by the substantial buildings that the owners have occupied them for many years. But such old settlers are not many; a large portion of the land is either unoccupied or in a primitive condition agriculturally. The cities and villages of northern Wisconsin are twenty years in advance of the rural districts about them. Were the country developed in proportion of the cities and villages this region would today contain at least fifty thousand more inhabitants than it does. Were this so, farming lands would be much higher priced than they are at present. While the state has lost in wealth by this lack of normal settlements of a portion of its domain, individuals now seeking lands may be the gainers. It is certain that the time is at hand when the value of the better class of these lands will be duly appreciated by our people and rapidly occupied by them.

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Though Wisconsin was once a great spring wheat state, but little of that grain is grown now. Winter wheat is more satisfactory than spring wheat on the whole, yet in neither is there any profit. Our view shows a field of spring wheat on the farm of Ferdinand Ledke, one mile south of Cecil, Shawano county, taken July 19, 1895, with the beautiful forest of maples and other hard woods, interspersed with hemlock and pine trees, on the left in the picture.

In 1894, Herman Krueger, Cecil, sowed 18 bushels of winter wheat on 12 acres and harvested 324 bushels of grain therefrom.

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### **CLASSES OF PEOPLE WHO WILL DO WELL TO STUDY THE AGRICULTURAL ADVANTAGES OF NORTHERN WISCONSIN.**



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In many communities in the southern part of the state are farmers who have several sons, some of whom desire to possess farms in their own names; lands are high priced about home and such young men are looking for tracts which can be purchased at a low figure. For a sum of money which an industrious saving farm hand can lay up in two seasons, a good forty acre tract of land can be secured in any of our northern counties.

Another class of land seekers in our own state are those who find their present farms too small and wish to secure larger ones without incurring any large debt; these persons can dispose of their holdings to neighbors for such a sum of money as will enable them to buy a large tract of the finest of northern Wisconsin acres.

A third class embraces men now laborers on farms, tenants or farm renters, who wish to hold the title to the lands they shall hereafter cultivate in order that their best efforts and hard labor shall bring them just rewards. The region we are considering will meet their ambitious.

A fourth class embraces those living in the city or village who are tired of a hand-to-mouth existence and are anxious to possess a piece of mother earth where they are free from the landlord and his monthly rent collecting, and can put aside that ever-present fear of being thrown out of work through hard times or strikes. With a few dollars laid up for first payment a man who is now wearing his life out in the city with nothing left to lay up after the wants of the day are met, can come into possession of a piece of land which he can hold without fear of any one. On this tract there are no days of idleness, and though progress may be slow at first, each close of day will see something accomplished and the ideal home farm one day nearer realization. A home in the country means a sure heritage and a safe possession in old age.

Wisconsin is today the best state in the union for Wisconsin people to settle in, for these are familiar with the climatic conditions, social features and the laws and customs of our commonwealth; they have learned self-government as practiced here and can shift to their

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new holdings without serious break or inconvenience. First of all, then, Wisconsin's new and untamed but fertile lands at the north are for our own people to possess and occupy.

Again, our lands are open to settlement by people similar to our own now residing in other states. Wisconsin will welcome settlers from other states to her borders provided they come willing to work faithfully and diligently to build themselves homes, and are law-abiding and willing supporters of institutions of civilization and progress.

Wisconsin will also welcome those from foreign lands who come to our borders willing to amalgamate themselves into our communities and become a part of our people, as have thousands of foreigners in past years.

No people are wanted that come for speculation or who enter our borders with a lawless spirit, in expectation or hope of breeding dissension and disquiet. To turn the great, sparsely settled district of northern Wisconsin

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The farms of Clark county are being carved from a hardwood forest of great value. Neillsville, the county seat, has many fine farms already in advanced condition lying about it. Our view show an American bred Shire stallion, a splendid animal, owned by the Neillsville Stock Farm, located two miles from Neillsville. Many other fine specimen of horse flesh, as well pure bred sheep, were found on this farm.

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into a farming country means a vast amount of persistent, hard labor. There is little in such a country for the speculator in lands, and nothing for the tenants of a day.

### **IMPROVED FARMS AND CHOICE LOCATIONS.**

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This book will fall into the hands of some persons possessing considerable means, who for various reasons desire a home in Wisconsin. We have a letter from an eastern gentleman of means who writes:

“Were I thirty years younger, I should go to Wisconsin to live, for it certainly would be pleasure to cast one’s lot with a people on enterprising, progressive and up-to-date in all matters pertaining to agriculture and modern civilization.”

Let it be known that in the southern part of our state, which is thickly populated, there are many beautiful homesteads some of which are of our sale from natural causes. The middle portion of our state is also well settled and offers of all of the advantages found in most parts of our country, while the lands can be purchased at reasonable prices. Thus, while we are addressing ourselves mainly to those with limited means are calling attention to our new north, it should be understood that we have room and will welcome people of enterprise and means to any portion of our state wherever they may wish to settle, guaranteeing them fine properties and delightful homesteads.

There is still another class who should not be left unconsidered. People living in great cities not too far distant often seek a holding in the country where they may spend their summer vacations. Some wish camps in secluded woods, by streams and lakes filled with fish, or where the forests are inhabited by game. There are plenty of such places for the seeking. Others wish lands with fields and all the accompaniments of high farming, yet desire to have these lands located on rivers or lakes near railway stations, making them easily accessible. Our thousands of lake with rich farming lands about them in the southern part of the state as well as at the north present such opportunities in endless variety.

### **FISH AND GAME.**

A consideration of our fish and game falls without the pale of this book, which is devoted to a consideration of the agricultural resources of our new north. The opportunity must not be missed, however, of referring to these, though but a few words can be written. Many of the stream in northern Wisconsin are stocked with trout and have a reputation among fishermen, extending far beyond our borders. The innumerable lakes at the north are supplied with muscallonge, pickerel, bass and other gamey fish of large size and in great numbers. During the fishing season thousands of persons visit the north drawn thither by the opportunity for a rest in the deep, dense, woods and sport along the streams and on the lakes.

Deer are still found in large numbers over almost the whole north, though most unfortunately they are being rapidly diminished by the numerous hunters who visit those regions each fall during the legal hunting season.

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View of Tomahawk Lake, Oneida county. Many lakes in northern Wisconsin lie far from the haunts of men still surrounded by the primeval forest. Hunters and fisherman seeking sport of a high class unmarred by pot hunters, and others wishing to get away from the city with its cares and business, seek these secluded spots to enjoy the change and rest.

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### **Physical Features and Climate Conditions of Northern Wisconsin. F. H. King.**

#### **PHYSICAL FEATURES.**

Geographically considered Wisconsin occupies the same latitude as the southern half of France, Switzerland and the northern half of Italy; but unlike both France and Italy, which are located adjacent to the borders of oceanic waters, Wisconsin is situated near the center of a large continental area about 1,000 miles from the Atlantic ocean, 1,000 miles from the Gulf of Mexico and nearly 2,000 miles from the Pacific. In altitude its lowest lands are 500 feet above the sea level while its greatest elevations do not reach a height

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of 2,000 feet. Rib hill, situated a few miles southwest of Wausau, and the highest point in the state, has a measured altitude of 1,852 feet above sea level; but this is an isolated, rocky point which rises more than 600 feet above the surrounding plain in which it stands.

The highest general elevation of the state is found along the northeast boundary in Iron, Vilas and Forest counties, extending southward into Langlade county as far as Summit lake on the west, and yielding the head waters of the Wolf, Oconto and Peshtigo rivers on the east. In this district we have a broad, flat, but gently undulating surface lying between 1,100 and 1,200 feet above Lake Michigan and about 1,700 feet above the sea level. Away from this area toward the southeast, south and southwest, the surface falls quite rapidly so that a level of only 500 feet above Lake Michigan is reached along a curved line extending from Dunbar, in Marinette county, southwestward through Whitcomb, in Shawano, to Stevens Point, where, after sending a long narrow tongue south along the Wisconsin Central railways as far as Westfield, the line curves to the west and north passing Grand Rapids, Neillsville, Cadott, then to the northward of Chippewa Falls, and on as far as Barron. After reaching Barron the line turns to the southward again as far as the northeast corner of Pierce county, but returning upon itself so as to form a second long finger, it passes out of the state across the southwest corner of Douglas county. There is thus a fall of 600 feet in from 40 to 100 miles, or at the mean rate of 6 to 15 feet to the mile.

On the Lake Superior side the fall of the general surface is much more rapid, a descent of 1,100 feet along the Montreal river being made in a straight line distance not greater than 24 miles. As you pass northward from the water shed separating the waters of the Superior basin from those of the Mississippi the fall is not gradual. On the contrary there is at first, lying adjacent to the divide on the north side, a long and narrow, but shallow, through extending more or less continuously across the state from Iron county on the east to and through Douglas county on the west. The northern rim of this trough, in the east, is the Penoque or Iron ridge, which has an average altitude of

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View of a residence and a business street in Wausau, Marathon county. Those who think the towns in northern Wisconsin but groups of shanties to be vacated with the passing of the logging camp, should visit the enterprising, substantial city of Wausau. This city, with its population of 11,013, has many fine streets lined with beautiful and often elegant homes, and substantial modern public buildings and business blocks that would be the pride of eastern cities many times older. Wausau, which may be called the parlor city of the new north, is surrounded by a rich agricultural district, quite well developed in some directions, as shown by the fact that a good many farmers are regular depositors in its banks.

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1,000 feet above the lake. This ridge falls away to the southward from 100 to 300 feet in a quarter to a half a mile and from this level the southern rim of the trough rises very slowly indeed to the water shed. North of the Penokee range, in the east, is the copper range of hills, also most abrupt toward the south, but rising to a lesser height and often made up of a series of steps or ridges one above another. Passing down off from these to the northward you drop at first rapidly and then much more slowly upon the very flat, but gently sloping red clay district of Ashland, Bayfield and Douglas counties bordering Lake Superior.

The red clay lowlands are divided into an eastern and western section by the Bayfield ridge which attains a height of about 300 feet and ends in the Apostle islands in Lake Superior.

The red clay lowlands rise out of the lakes at once to a height of from 5 to 30 feet and go on ascending toward the south where, at a distance of from 5 to 20 miles, they rise somewhat abruptly into the highlands.

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As a result of glacial action the whole of the northern portion of Wisconsin has that peculiar undulatory surface always associated with glaciation, and a range of "kettle hills" extends from town 17, range 7 east, in a nearly northerly direction to town 32, range 12 east, where it bends abruptly toward the west, swinging first about twelve miles to the north and then as many more to the south of a due east and west course until it reaches town 32, range 9 west. At this point it again turns due north, but after reaching town 37, range 10 west, it again bends abruptly to the southwest, passing out of the state near Hudson in St. Croix county. This range of hills has a width, at right angles to the direction of its trend, usually of one to five miles. Sometimes it is double or even three-fold and the gravelly and stony hills have a height ranging all the way from 15 to 150 feet. The double character of this range of hills is most marked in St. Croix, Polk and Burnett counties, and a broad spur of these kettles reaches northeastward beyond Burnett country as far as town 49, range 5 west, on the Bayfield ridge.

On the higher and generally flatter portions of the state, particularly in Lincoln, Forest, Langlade and Vilas counties, in the east, and in Polk, Burnett, Barron, Sawyer and Bayfield counties, in the west, the inequality of surface due to glacial action has resulted in the formation of very large numbers of small lakes and swamp areas which give a wonderful diversity and often great beauty to the scenery, while at the same time they render possible a wide diversity in the agricultural interests which must spring up about them.

In other sections of this region there were, during the time of the ice invasion, considerable areas where the overflow of waters from the melting ice developed broad, gently sloping, sandy plains, and the most notable of these is found in Adams and portions of Portage, Wood, Jackson, Monroe and Juneau counties. A second large area of this character is located in Burnett and Douglas counties, while smaller and more isolated areas are to be found in the counties of Marinette and Florence.

It should be noted here also that except on the sandy and loamy plains just referred to the surface of the country is more or less thickly overstrewn with loose boulders of varying sizes. On most of the lands these stones are not more numerous than will be needed to

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Home of Peter Lagacy three miles northwest of Washburn, Bayfield country. Mr. Lagacy is a French Canadian, who came to Wisconsin twelve years ago with his family, finding work towns as best he could. Not getting ahead any in working by the day, six years ago he bought a tract where he now lives paying \$300 down and going in debt for the remainder, \$200. He is now out of debt, having sold wood to pay for the land; has 15 acres in meadow and five free from stumps, on which he raises garden truck for sale in Washburn and other towns. He owns two horses and one cow. All will concede that he is infinitely better off on his forty acre tract than were he yet taking chances as a day laborer in town.

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meet the demands for the foundations of farm buildings. It is true, however, that in many localities, and especially along river bottoms and over the steeper slopes, the ground is too to be readily cleared for agricultural purposes.

These facts need to be kept in mind by the prospective settler in selecting farms, for the surface features and soil conditions change so abruptly and in such comparatively short distances that it will seldom be safe to buy a piece of land on the strength of a favorable description of an adjacent section or tract.

### **THE CLIMATE AND WEATHER CONDITIONS.**

Situated as Wisconsin is, near the center of the North American continent, both its climatic and its weather conditions must partake of those which are peculiar to the central regions of great land areas, that is, receive a large amount of sunshine and attain high temperatures in summer with extreme cold and clear skies in winter, as contrasted with



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cool, cloudy summers and warm, damp winters which characterize lands lying immediately to the leeward of large bodies of water.

But our summers are neither as extremely hot nor our winters as cold as they would be were we not situated in the angle between the two great lakes Superior and Michigan, which bound us on the north and on the east. Neither of these lakes ever freezes over in the winter and with a combined area of 32,000+22,400 square miles, equal to that of the state itself, and with a mean depth probably exceeding 800 feet, it is plain that whenever the winter winds are in the north or in the east, both their temperance and their humidity must be greatly augmented in their passage across them before reaching the state. So too, during the warm portions of the year, these great bodies of water tend to make the air cooler whenever it comes to us from the north or from the east, for body of Lake Superior never reaches a surface temperature much greater than 46° F., while at a few fathoms below the surface it changes not more than one or two degrees above or below 38.8° F., and much the same conditions hold for Lake Michigan.

While our prevailing wind is from some westerly quarter, this is so frequently broken up by the storm centers passing by or across us, on the average at the rate of about two each week, it is evident, that since the front of these storms is characterized by easterly winds, the whole state must have its temperature more or less affected by the great bodies of water in question across which the air is drawn whenever a storm center is to the west or southwest of us.

Then again these great lakes exert a marked and beneficial influence in lessening the tendency to injury from frost both in the fall and in the spring. During the spring the dangers from frost are lessened partly by the influence of the lakes in preventing the early development of fruit blossoms, so that the season of frosty nights is passed before buds are far enough along to be injured by them, and partly by the direct warming influence of the lakes when late frosts do occur. This influence is most marked in a zone immediately adjacent to the lake itself where the cold air of the land at night tends all the time to flow off

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upon the water, forcing the warmer lake air up and back upon the land to take the place of that which has flowed away. But

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The May freeze of 1895 greatly injured the grass crop all over northern United States, and Wisconsin's meadows were no exception. As consequence we cannot give a view of a meadow equal to what can usually be found at the north. Our artist shows the timothy field of G. Gunderson, one mile east of Cumberland, Barron county, on July 16, 1895. The grass seed had been scattered on the partially stirred soil between the stumps and given fine crops for several years. Northern Wisconsin will always be known for its splendid timothy hay.

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this peculiar action of the lakes in preventing frosts is much more marked in the fall than in the spring, because at this season the water is warmer and thus makes the lake breeze much stronger and causes it to extend farther inland.

But our state is rendered better suited to the apple and similar fruits than Iowa and Minnesota by the tendency Lakes Superior and Michigan have both to prevent the extremely low zero weather which follows our winter storms and to diminish the tendency to high tree-trunk temperatures which result from the bright mid-day which follows the cold waves when the air is exceptionally pure and from moisture. At such times as these the air very often comes from the north and northeast, both raised in temperature and more highly charged with moisture it is neither as transparent to the sun's rays by day nor as cold at night as in the air of Iowa or Minnesota.

It very often happens, too, as severe storms pass us to the south with extremely cold waves in their rear, that the influence of Lakes Michigan and Superior is to cause a little snow to fall in our state even after the wind is fairly in the northwest, and the coldest time is at hand; but this formation of the snow in the air is a heating process and tends in a very

marked way to prevent us from experiencing the extremely cold weather that, were it not for the moisture laden air from the lakes, would certainly come upon us.

Wisconsin cannot enjoy the favorable climate conditions for fruit culture which the southern peninsula of Michigan possesses because that state is surrounded by water on all sides except the south, but we are better suited to fruit growing than we would be did we not have Lakes Michigan and Superior on our east and north.

### **THE TEMPERATURE OF WISCONSIN.**

In stating the temperature conditions of Wisconsin it has seemed best to give the mean values for the months of January, May, July and September rather than the means of three months of the seasons as is usually done. We do this because the mean temperatures of these four months furnish a better basis for judging of the agricultural and horticultural fitness of the state than the mean of the seasons, winter, spring, summer, and autumn cold.

Referring to the map it will be that for January, the coldest month of the year, the mean temperature ranges from a little below 9° F. in Burnett, Washburn, Sawyer counties, to a little above 18° F. in Racine and Kenosha counties. It will be also that the isothermal lines show very clearly how potent the lake influences are in holding the temperature of the state, during this month, above what it would otherwise be. All of the lines are carried long distances to the north as they approach the warm waters of Lake Michigan and in the region of Lake Superior the Lines of 10° and 9° are actually bent back upon themselves by the warm air which, in times of north wind, blows from the unfrozen water.

Turning next to the map showing the temperatures for July, the warmest of the year, it will be seen that the lakes exert an opposite influence and cause the lines of equal temperature to be crowded farther south along the lake shore. It will be seen that while we have a mean July temperature of 66° F. along the south

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Many pioneers in districts in northern Wisconsin where corn will flourish, have a "sorghum patch," the syrup from which is a healthful food and its use saves paying out money for poorer products at the store. Our main view, taken near Osceola, Polk county, shows a sorghum field planted May 20th, the view being taken September 9, 1895. In the corner above is shown syrup manufacturing plant of F. M. Benedict, three miles south of Waupaca county. The stripped cane shows in the left of the picture and the baggase, or waste, on the right, with the evaporating pan in front.

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shore of Lake Superior the very southwest corner of the state has a temperature but 8° F. warmer and Kenosha county but 4° warmer.

In the spring of the year, referring to the map for May, it will be seen that at the time for planting corn and potatoes, Burnett and Washburn counties have the same temperatures as do those of Sheboygan and Ozaukee, much further south on the Lake Michigan shore, where excellent agricultural conditions obtain. In this month the influence of Lake Michigan in holding the temperatures down, close along the shore, is very clearly shown by the map, from which it may be readily understood how injury to fruits from spring frosts in this region, and especially in Kewaunee and Door counties can rarely occur.

Table showing highest and lowest temperatures for each month of the year of twelve years, ending 1335.

Locality.	Jan.	Feb.	Mch.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Duluth	51	57	62	75	91	92	99	93	90	78	65	51
Marquette	38	24	25	3	26	36	46	45	30	8	29	34
Escanaba	95	100	96	97	87	66	59	26	27	14	3	22
Alpena	31	40.3	39.7	28	18	9	20	45	52	57	65	83
St. Paul	88	92	89	84	75	61	48	26	32	20	2	20
La Crosse	34	42	38	26	17	9	23	52	58	66	72	91
Milwaukee	92	83	63	56	27	27	14	2	22	33.5	45	40
	29.3	22	4	15	49	59	68	82	94	94	100	98
	87	72	56	31	32	22	7	24	39	46	43	30
	15	24	30	59	65	72	83	96	98	101	96	92
	84	70	60	43	34	23	10	20	40	52	44	31
	18	21	37	59	60	70	82	90	94	95	98	94
	83	70	63	25	22	3	12	25	40	50	42	32
	22	5	21									

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In September the map shows that the temperature of Wisconsin averages from a little less than 57° F. in the northern tier of counties to about 62° F. in the southern part of the state, the eastern part of the state being a little colder than the western part on account of the modifying influence of the lake.

In the table above are given the highest and lowest temperatures for each month of the year for the 12 years ending 1883, at several places in, and closely adjacent to, the state. These will serve to indicate what the extremes of temperature are.

Table showing time of first and last frosts for 10 years.

Duluth.	Marquette.	Escanaba.	Alpena.	St. Paul.	La Crosse	Milwaukee	1874-75	Sept. 15
Oct. 20	Oct. 12	Oct. 14	Sept. 15	Sept. 15	Nov. 2	May 17	Apr. 21	May 5
May 2	Apr. 22	1875-76	Sept. 17	Sept. 22	Sept. 28	Sept. 22	Sept. 17	Sept. 17
Aug. 22	May 14	Apr. 18	Feb. 25	1876-77	Sept. 29	Sept. 13	Aug. 21	Sept. 12
Sept. 26	Sept. 26	May 26	June 12	May 2	Mch. 1	1877-78	Oct. 5	Sept. 5
Sept. 21	Sept. 21	Sept. 17	Oct. 6	Sept. 18	Apr. 16	May 30	June 8	June 12
May 13	1878-79	Sept. 10	Sept. 5	Sept. 11	Sept. 22	Sept. 10	Sept. 11	Oct. 19
June 2	Apr. 20	June 7	Apr. 2	June 16	June 2	1879-80	Sept. 9	Sept. 12
Aug. 16	Sept. 10	Sept. 4	Sept. 24	Sept. 25	May 21	May 13	June 8	June 3
May 21	May 21	May 15	1880-81	Sept. 8	Sept. 8	Sept. 22	Sept. 18	Sept. 8
Sept. 14	Apr. 8	June 7	June 22	June 11	Apr. 16	Apr. 16	June 23	1881-82
Sept. 28	Sept. 28	Aug. 15	Oct. 1	Sept. 28	Sept. 28	Oct. 19	May 1	June 20
May 1	May 23	May 22	June 5	June 1	1882-83	Sept. 20	Sept. 24	Sept. 23
Sept. 24	Sept. 20	Aug. 10	Sept. 24	May 11	May 23	May 21	June 1	May 21
May 22	Apr. 23	1883-84	Sept. 8	Aug. 14	Aug. 14	Aug. 14	Sept. 8	Sept. 8
Sept. 10	Apr. 25	May 14	May 29	may 17	Apr. 21	May 29	May 29	

### KILLING FROSTS.

These do occur in the state as they do in those east, west and south, but not to such an extent as to in any way lead to the discouragement of agriculture in a wide range of its phases. The appended table will show what has occurred during ten years in the past and

View in the hardwood forest ten miles southwest of Florence, Florence county, taken August 2, 1895. This vast forest extends from Shawano county on the south into Michigan on the north, and has a width varying from twenty to forty miles. The timber consist of hard maple, basswood, birch, elm, oak-hemlock, etc. The value of this body of timber is very great and the lands carrying it will some day be occupied by farms, as the soil is generally very fertile.

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what may reasonably be expected in the future. An inspection of this table shows that neither Duluth nor Marquette are more subject to frosts in the growing season than are places much further south.

#### THE TEMPERATURE OF THE SOIL.

During the time of our inspection of the district the temperature of the soil at a number of locations was taken at each foot to a depth of three feet below the surface. Temperatures were also taken in other portions of the state at the same time for purposes of comparison, and these are given below:

Date.	Locality.	Soil.	Temperature.	1 ft. F.	° 2 ft. F.	° 3 ft. F.
July 30	West Superior	Red clay	67.3	66.1	62	
July 31	S. of Copper Range	Loam	67	67.2	July 31	
July 31	Poplar	Red clay	67.2	65.4	63.6	
July 31	Poplar	Red clay	70.3	68.1	66.4	
July 31	Poplar	Sandy	71.2	70.1	67.6	
Aug 2	White Birch	Sandy	67.7	69.9	68.3	
Aug. 2	White Birch	Sandy	64.2	65.2	65.2	
Aug. 3	Minong	Sandy loam	63.5	67.8	68.9	
Aug. 4	Oshkosh	Red clay	67.1	69.2	Aug. 6	
Aug. 6	Madison	Clay	69.5	69.3	67.0	
Aug. 6	Madison	Sandy loam	76.5	74.7	72.1	
Aug. 18	Freehold, N. J.	Sandy loam	74.1	72.6	71.3	

It will be seen from this table that there is an appreciable though not large difference between the temperatures of the soil in the Superior district and those at Madison and at Oshkosh. Even as far south as Freehold, New Jersey, where I took soil temperatures on August 18, the soil was there only about 3° F. warmer than at Poplar nineteen days earlier.

So far, therefore, as the temperature of the soil is concerned, the agricultural prospects of northern Wisconsin are favorable.

### **THE RAINFALL IN WISCONSIN.**

Taking Wisconsin as a whole, and during the period covered by the last 25 years, it may be said with a close approximation to accuracy that its mean annual precipitation is between 32 and 33 inches. This amount of rainfall, however, is not uniformly distributed throughout the year as an inspection of the maps will show. The mean rainfall for the state at large, by seasons, is nearly as follows:

Winter. Spring. Summer. Autumn. 4.7 in. 7.6 in. 11.7 in. 8.3 in.

As June, July and August are the three months of the year when vegetation is in the greatest need of water it will be seen that our rainfall is exceptionally well distributed, the largest amount falling in the three summer months and the least during the three winter months, when, agriculturally, least water is needed.

Then, again, the rainfall of the six growing months, April to September inclusive, is 21 inches on the average for the whole state, or lacking only 1.3 inches of being twice what it is during the six months when crops, with us, are at rest. Taking the state as a whole, more rain falls in June than in any other month.

Referring now to the seasonal maps of rainfall it will be observed that northwest Wisconsin has in winter less than 4 inches while southeast Wisconsin has 6 inches or more; but there is a small area with Pepin county as a center where the precipitation is also 6 inches.

In the summer season nearly all of the northwest counties get from 12 to 13 inches of rain, while there is a section in the eastern part of the state where the rainfall is less than 10 inches. It will be noticed also

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The enormous crops of potatoes which will always be produced in northern Wisconsin, make starch factories a necessity. In years of low prices large quantities of potatoes are turned into starch at these factories, while when prices are high they get but a limited amount, though the starch factory is a good place for disposing of the culls and "off quality" tubers. Our view shows the starch factory at Black River Falls, Jackson county, in operation during the fall of 1895. The wagon in the foreground is drawing a load of starch to the railway depot.

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Summer. Mean temperature for July, and the mean precipitation for June, July and August.

Winter. Mean temperature for January, and mean precipitation for December, January and February.

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Autumn. Mean temperature for September, and the mean precipitation for September, October and November.

Spring. Mean temperature for May, and mean precipitation for March, April and May.

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that Pepin county, which in winter gets a larger precipitation than the lands around it, now gets less.

Comparing the rainfall of spring with that of autumn it will be observed that, while all of the northern counties get from 9 to more than 10 inches in the spring, they receive in autumn from less than 7 inches to not more than 8.5 inches. There is, however, an exception to this statement in the case of Dunn, Barron, St. Croix, Polk and Burnett counties, which receive a little more than 9 inches of rain both fall and spring.



If we compare the rainfall conditions of Wisconsin with those of adjacent states it will be found that the general averages stand about as given below:

Winter. Spring. Summer. Autumn. Mean. Wisconsin 4.7 in. 7.6 in. 11.7 in. 8.3 in. 32.3 in. Illinois 7.2 in. 9.8 in. 11.4 in. 9.2 in. 37.6 in. Iowa 4.0 in. 8.6 in. 12.5 in. 7.9 in. 33.0 in. Minnesota 2.7 in. 6.4 in. 11.2 in. 5.9 in. 26.2 in. Southern Michigan 7.0 in. 7.8 in. 10.1 in. 9.2 in. 31.1 in.

From this table it will be seen that we have more rain in summer than either of the other states except Iowa, and that throughout the year our rainfall exceeds that of Minnesota and in the aggregate is almost equal to that of Iowa.

### **RECURRENCE OF WET AND DRY YEARS.**

It is true that the climate of the United States and that of other countries undergoes very material changes in the amount of the annual precipitation. For a succession of years the amount of water which falls as rain or snow is larger than the average; then there follows another succession of years when the rainfall is less than the normal. The climate of Wisconsin, in common with that of adjacent states, is subject to such changes and the past few years have been exceptionally dry ones, but this statement is more emphatically, true of the summer season than it is of either fall, winter or spring. The rainfall has been so small and the drainage and evaporation so large that the general level of the ground water throughout most of the state has fallen to a level from 3 to 10 feet below the normal, so that it has become necessary to deepen large numbers of wells, while many marshes, which a few years ago were very wet, are now so dry that they are being plowed. Many efforts have been made to discover a cycle of years in which these changes from wet to dry regularly occur, but thus far no satisfactory evidence of a regular recurrence has been found.

While it seems very reasonable to expect that we shall very soon pass into a series of wet years it is quite certain that unless very exceptionally wet years fall together the level of the ground water in northern and central Wisconsin will not attain its former height. This

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cannot occur because so much timber and under-growth has been cut away and forest fires have so extensively destroyed the moss, peat and decaying organic matter over such enormously large areas, that not only must the direct run-off and the surface evaporation be greatly augmented during wet periods, but the rate of percolation into the ground also must be greatly increased and these conditions must tend continuously to hold the ground water at a lower level than was normal to it in former years.

These statements must not be construed as affirming that all low lands which are now dry enough to cultivate may not a few years later require drainage in order that their cultivation may be continued. It is more

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Prof. King tells us there are 1,240 lakes in Wisconsin, and as nearly all of these are located in the northern half of the state it is easy to realize their abundance and to understand how they have added materially to the attractiveness of this region. Our view shows a merry party off for a picnic of Shell Lake, Washburn county.

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than probable that many areas will become wetter than they now are unless drained, but not as wet as in former years.

### **THE WATER SUPPLY.**

Northern Wisconsin is very abundantly supplied with living waters, both streams and lakes being numerous. So many indeed are the streams that north of the parallel of Grand Rapids there are but nine government townships in which a detailed map does not represent one or more streams, the average number shown in the 40 townships of town 33 being, for example, 5-7 for each 6 miles square. So numerous, too, are the lakes that north of the parallel referred to above, the general geological map of the state shows no less than 1,240, or an average of more than one lake for every six miles square.

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The streams are pretty uniformly distributed throughout the whole of the northern part of the state, but in certain regions they are notably less abundant than elsewhere. Among these are the glacial overflow plains referred to on page 26, where the rains percolate quickly and deeply into the porous soil only to emerge at distant and lower lands. Then, too, it is usual for the areas covered by the glacial moraines or "kettle hills" referred to on page 26 also to be largely destitute of streams, chiefly because they are composed of very open and porous material, but also because the surface is very uneven and rolling, which enables, or causes, the water to percolate from the bases of the hills into the many hollows or basins between them, giving rise to most of the many lakes to which reference has just been made.

Throughout northern Wisconsin the water of the streams, lakes and wells is usually quite soft, and as a type of the waters of the region the chemical analysis of a spring in Douglas county, near White Birch, may be cited.

In one U. S. gallon there are:

Grains

Sodium chloride 0.0233

Calcium chloride 0.3250

Calcium sulphate 0.6467

Calcium bicarbonate 1.5440

Magnesium bicarbonate 1.0069

Iron bicarbonate 0.0970

Aluminum oxide 0.0146

Insoluble residue 1.0322

Total solids per gallon 4.6867

## **WELLS.**

Regarding the procuring of water from wells for farm purposes it is likely that on all lands outside of the red clay district and where there is any considerable depth of drift an abundance of good water will be found at moderate depths. In most places where settlements have been made the wells are seldom more than 20 to 30 feet deep and very often not more than 15 feet.

In digging wells in this region it should be kept in mind that if water in abundance is not found before the crystalline rocks are reached it will be unless to attempt to procure water by drilling into them. These rocks are always so impervious to water that it does not enter them in quantities sufficient to supply wells except in rare cases where there are seams or fissures.

The counties where the first rock reached belong to the crystalline series are all those lying north of Polk,

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The cranberry industry of Wisconsin is one of much importance, and though it has received a temporary back set because of fire ruining many of the best tracts, it will go on in some sections under improved conditions, for there is no more profitable business than this when rightly managed. Our view shows the pickers at work in the cranberry marsh of Mr. George Williams, four miles from Waupaca, Waupaca county. This marsh is so located that it can be flooded with water any time of the year.

The hop-picking scene shown in the corner was taken at the hop yard of J. E. Guyant, four miles south of Waupaca. Wisconsin was once a great hop growing state, but the industry is far less important than formerly.

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Barron, Dunn, Eau Claire, Jackson, Juneau, Portage, Waupaca, Shawano and Marinette. Through the counties named the margin of the exposed crystalline rocks extend so that in them and to the south sandstone or limestone, or both, may be found and water obtained in the sandstone.

In very many parts of Monroe, Juneau, Wood and Adams counties water can be procured in sufficient quantity quickly and cheaply by using the "drive wells," but it is only in exceptional localities north of these counties that these wells are likely to be successful.

It will sometimes happen in digging wells in the region underlaid by the crystalline rock that large granite boulders will be struck, either in digging an open well or in drilling, and the boulders may be so large as to lead to the impression that they are rock in place. It is not usual, however, for these loose stone to be more than 4 feet in diameter, so that if, after entering crystalline rock to that depth, gravel or loose material is not reached the chances are against finding water in that place. It is true that in this region boulders do have a diameter as great even as 10 and 20 feet, but they seldom occur either far from or above solid rock in place. In digging farm wells it is always best, whenever it is possible to do so, to make them deep enough so as to have not less than 15 to 20 feet of water in them. This is advisable, first, because the amount of water which a well can supply usually increases more rapidly than the depth of water in it, and second, because the level of the ground water, which is the source of supply to the well, rises and falls during the season and with a series of dry seasons sometimes through as much as 5 to 10 feet.

#### **THE GROUND WATER IN ADAMS, JUNEAU AND MONROE COUNTIES.**

Adams, Juneau, Monroe and parts of Wood and Portage counties, have beneath their surfaces and very close to it an exceptionally large volume of water which should be turned to use in the culture of cranberries and in the raising of small fruits and garden products.

These counties are underlaid with not less than 100 to 400 feet of sand and porous sandstone, which is now filled with water to from 3 to 20 feet of the surface of the ground, and which is kept full not simply by the rains which fall upon them, but by an underflow from the more northern counties whose underlying crystalline and impervious rocks slope rapidly toward the south.

Each foot of sand of medium coarseness is capable of holding, when its pores are full, not less than one-third of a cubic foot of water while the closest of ordinary sandstone may contain one-twelfth of its volume. It is therefore highly probable that the water underlying the counties in question is not less than the equivalent of a lake equal to the area of the counties and having a depth of one-fifth the thickness of sandstone beds. If these beds are but 100 to 200 feet thick, then the depth of water in them is from 20 to 40 feet, from one-half to two-thirds of which might be recovered and brought to the surface with pumps. This, or some other water, is greatly needed to develop the large areas naturally well adapted to cranberry culture, and I believe that it will pay to pump it for purposes of market gardening.

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View of the home of Julius Koehler near Phillips, Price county, taken September 4, 1895. Mr Koehler's buildings were destroyed by the great fire of July 27th, 1894. Knowing that the fire would never again return to do damage in that section, he proceeded at once to rebuild. Our view shows the fine garden in the foreground; the pansy bed and other flowers near the house and finally the Indian corn plants leaning against the house. Large "Yankee" pumpkins were fully ripe on this farm, and many fine vegetables were noted.

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## **THE SOIL OF NORTHERN WISCONSIN.**

The soils of the northern part of Wisconsin, although extremely varied in character, both chemically and physically, may be grouped under seven readily recognized classes; these are:

1. Sandy soil.
2. Sandy loam.
3. Prairie loam.
4. Clayey loam.
5. Loamy clay.
6. Heavy red clay.
7. Swamp or Humus soil.

The areas occupied by these several varieties of soil are indicated on the map facing page 00, where they are shown by different intensities of shading and by the numerals 1, 2, 3, 4, 5, 6, 7.

## **THE SANDY SOIL.**

The sandy soils are found chiefly in those regions which have been designated as glacial flood plains and owe their origin to the sorting action of flowing water as it issued from the melting ice. The areas covered by these soils are indicated on the map by the dotted shade and are numbered I, I, I. It will be seen that the largest and most continuous area of this type of soil is found in Jackson, Wood, Monroe, Juneau, Adams and Portage counties, while a second large area extends from the northwest corner of Polk country in

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a northwesterly direction into the Bayfield peninsula, occupying considerable portions of Burnett, Washburn, Douglas and Bayfield counties. The other areas, it will be seen from the map, are much smaller and are often distributed along river valleys.

In texture the sandy soils are very similar to those of Long Island, New Jersey and Maryland, which have been designated as truck lands, that is, soils adapted to the growing of early vegetables.

A direct comparison of these soils with two of the Maryland truck soils shows them to hold the relations expressed below:

Mean diameter of soil grains. No. 471. Early truck sub-soil Maryland .1119 m. m. No. 563. Early truck sub-soil Maryland .0756 m. m. Pine barrens west of Minong 2d foot .1432 m. m. Sandy soil at Minong 2d foot .0513 m. m. Sandy soil at Stevens Point 2d foot .0920 m. m. Sandy soil at Stevens Point 2d foot .0935 m. m. Sandy soil at Tomahawk 2d foot .1242 m. m. Superior Junction 2d foot .0374 m. m. Nekoosa 2d foot .0520 m. m.

These soils, it will be seen, are very coarse and open in texture; indeed they are so light that only the finer varieties of them, or those lying within 2 to 5 feet of standing water in the ground, can ever become very productive, except under methods of irrigation and intensive farming. They are not lands, therefore, toward which the homeseeker of today with small means should be directed.

It should be observed, however, that the lands of these areas are not all of them equally light. In many places and especially along the margins, where one type of soil shades into another, there are many very desirable home tracts where the soil is a loamy sand, so readily cleared, so easily tilled and so warm that these advantages go a long way in compensation for the lack of the endurance which characterize the heavier soils, which are less readily cleared and not so easily tilled.

On the border areas, too, where the heavier and the lighter types of soil join, it will be found decidedly advantageous



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One of the striking features of northern Wisconsin is the complete intermingling of pioneer methods and devices with the latest machinery and the most improved practices common in the oldest settled agricultural communities. Wherever the farms of the settlers have been cleared until the fields touch each other along the leading highways, the harvester and the steam thresher are to be found, though usually but a little way off can be seen the stump puller, the log barn and other primitive objects. Our view, taken October 17, 1895, shows the steam thresher at work near Rice Lake, Barron county.

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advantageous often times to make the selection in such a way that both types of soil shall constitute a part of the same farm. By doing this better advantage can be taken of the season and a larger variety of crops can be raised.

### **CARE OF THE SANDY LANDS**

It should be recognized with great clearness at the outset that these light lands, naturally not very rich in plant food and with a strong tendency, on account of their open nature to favor both rapid fermentation and excessive leaching, must be worked from the first and continually along lines which tend to augment the store of nitrogen and other forms of plant food in the soil rather than diminish it. Systems of rotation in which some leguminous crop like clover, peas, lucern or lupine occupies a prominent place should be entered upon from the very start and continuously persisted in.

But these light lands are not well suited to general farming and must be turned to use along special rather than general lines. They are not lands naturally adapted to either grass or grains and cannot, except under methods of irrigation, be made highly remunerative along dairy lines. With sheep and enough of other stock utilize the forage necessarily produced during the rotation of crops indispensable to an economic

development and maintenance of a fertile soil, potatoes and garden vegetables can undoubtedly be produced on these lands of excellent quality and in praying quantities.

### **CLEARING THE LAND**

In the early reclaiming of these sandy lands much thought should be paid to the preservation of so much of the native forest growth as shall insure ample protection against the destructive effects of parching winds which have been found so serious on similar and even more loamy soils further south in this state, and which are much dreaded in the semi-arid regions. In Bulletin 42 of the Wisconsin Agricultural Experiment Station,\* treating of "The Destructive Effect of Winds with Methods of Prevention," this matter is referred to at some length and it is there urged, that in clearing such lands as those here in question, belts of native timber of considerable width, extending north and south along section and quarter section lines and perhaps east and west along section lines at least, should be reserved as wind breaks, which experiments have shown do greatly reduce the force of the wind near the surface of the ground and at the same time impart to the passing air a very appreciable amount of moisture which materially decreases its parching force both by decreasing its temperature and by increasing the amount of water in it.

\* This bulletin will be sent to all who write for it, addressing Agricultural Experiment Station, Madison.

There can be no question about the danger of serious injury being sustained by these lands through the drifting of the slightly coherent soil and by the destruction of crops early in the season, for it has occurred on stronger soils; and since no additional expense is required to make these reservations, and since, when the native trees have all been cut, they can only be replaced at a very large expense of time, care and money, it is only the part of prudence to urge with greater emphasis the reservation of such barriers against the winds as have been here referred to.

### **1. RYE TO PREVENT DRIFTING AND WASTE BY LEACHING.**

Rye sowed in early fall or among corn and potatoes

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Another crop that succeeds admirably in northern Wisconsin is millet, an annual grass which furnishes excellent hay. Our view, taken July 30, 1895, shows a millet field on the farm of Henry Higgins, four miles northwest of Antigo, Langlade county. The land on which this millet grew was logged in the spring of 1895 and the millet scattered among the stumps. The luxuriance of this first crop tells plainly of the strong, fertile soil of this region.

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at the time of the last cultivation and allowed to grow until the ground is ready to be planted the following spring, will lessen to some extent the danger from the fall and early spring drifting and at the same time prevent to some extent the loss of fertility by fall, winter and early spring leaching. The dangers from this practice are two. The first is in the loss of the seed sown on account of the soil being too dry for early and effective germination, and second, when a good catch is secured and the rye is allowed to stand too long the following spring it is liable to so thoroughly dry out the soil and so completely lock up the immediately available plant food that the crop which follows must suffer for both water and food, especially if the season is a dry one.

## **IMPROVEMENT OF THE SANDY SOILS BY IRRIGATION.**

Referring to the soil map it will be seen that in various parts of these sandy soil regions there are many small lakes and some streams whose waters should ultimately be turned to use in the irrigation of suitable tracts of land lying adjacent to them. This will of course require capital and intelligent management but it is the lack of sufficient water rather than plant food which primarily makes them less productive than other lands.

## **2. THE SANDY LOAMS**

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The soils of the sandy loam type cover a much broader area in the state than do those just described. In a general way it may be said that the distribution of the sandy loams is roughly coincident with the territory where the potsdam sandstone is the rock immediately below and the one which has contributed a large share of the materials of the soil itself. It occupies the area marked 2 on the map.

This is a warm and easily worked soil, finer in texture than the last type but in reality one of rather coarse grain, their mean diameters being about one-half that of the sandy type or .02647 m. m. in diameter, a size which requires for the minimum number about 890.6 million grains per cubic inch, while in a cubic inch of the former type there would be about 132.7 million grains.

This sandy loam is pre-eminently a potato, market garden and small fruit soil and the one which has yielded such excellent results both as regards quality and quantity in southern Waupaca, Washara and Portage counties. But on account of its light, open texture and relatively small water capacity it is not best suited to hay or grain and in the line of animal husbandry is better suited to sheep and hogs than to dairying on an exclusive scale.

It should be borne in mind, in studying the distribution of this soil and that of the preceding type, as indicated on the map, that each type shades into the other in an extremely irregular manner, so much so, that the map must be depended upon by the purchaser only as indicating to him that the region is covered with a light soil, either sandy or a sandy loam.

These sandy loams, whenever they are in proximity to an adequate supply of water and the lay of the land is suitable for it, are the ones particularly adapted to irrigating not only for small fruits and market gardening but for potatoes as well.

In regard to the care of these soils nearly all that has been said regarding the sandy soils on pages 44-46 applies to these, for like the sandy soils, these are subject

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Soils of Northern Wisconsin.

*From State Geological Report, 1882.*

1, 1, 1, Sandy Soil.

2, 2, 2, Sandy Loam.

3, 3, 3, Prairie Loam.

4, 4, 4, Clayey Loam.

5, 5, 5, Loamy Clay.

6, 6, 6, Heavy Red Clay.

7, 7, 7, Swamp Soil.

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View of a business street in Marshfield, Wood county. This young city, with a population of 4,586, has five railroads. It exists and prospers because of its pine lumber, and especially its hardwood industries. Its numerous factories manufacture furniture, chairs, veneer, bed-springs, mattresses, staves, barrel headings, coil hoops, cheese boxes, honey sections, barrels, pumps, broom handles, etc. The soil of this section is rich, as shown by the heavy hardwood forests; lands are still low priced.

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to rapid fermentations and a large loss of fertility by percolation and drainage unless great care is exercised in these regards.

### 3. THE PRAIRIE LOAM.

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The prairie loam is another of those light, open and easily worked soils which in many ways is more closely allied to the two varieties just described than it is to those which follow.

Usually the regions of these prairie soils are underlaid at depths of from 3 to 5 feet with a coarse, very open gravel which gives exceptionally thorough drainage to them. They must also be subject to a very large soil-breathing which doubtless contributes largely to their exceptional native fertility and to their permanent fertility when they are intelligently handled.

The only areas in that portion of the state covered by the soil map which are occupied by this prairie soil are relatively small, the largest being found in St. Croix county, which there covers not far from an equivalent of seven townships. Other areas are found in Pierce, Pepin, Buffalo, Trempealeau, Adams, Waushara and Portage counties, and are marked 3, 3, on the map. They are quiet dark in color and in Town 20, Range 9 east, the soil grains have a mean diameter of .0304 m.m. in the first foot and .0478 m.m. in the second foot, or such that the minimum number of soil grains per cubic inch would be 583.3 and 150 millions respectively. This prairie loam is therefore intermediate in coarseness of texture between the sandy soil and the sandy loam.

### **4. THE CLAYEY LOAM.**

The clayey loam differs from the other varieties of soil which have been described in being finer in texture and in containing a larger per cent. of clay. It is a heavier soil to work, has a large capacity for holding water and will not leach as badly as the three varieties described. On the other hand it will require greater care and judgment to avoid working it when it is not in proper condition as regards amount of moisture.

Samples of this variety of soil taken at Drummond, T. 45, R. 7 W., show the minimum number of soil particles to exceed 1545 millions to the cubic inch. Another sample taken

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from T. 34, T. 7 W., near Bruce, on the farm of Mr. John Tymon, shows a minimum number of 2792 million grains per cubic inch, making it as fine as the next variety.

The area in northern Wisconsin covered by this type of soil is larger than that occupied by any other variety, as an inspection of the soil map will show, where the area of light shade labeled in various places "Clayey loam" and with the numeral 4, 4, 4, represents its distribution.

The surface of the country covered by this type of soil is generally more or less rolling, but not to such an extent as to interfere seriously with tillage. The soil, too, is much more stony than in the case of types 1, 2, 3, and in some places the loose stones are so thick as to practically cover the surface, making the clearing of the land very laborious and expensive.

In all sections visited where farms have been cleared on this variety of soil it shows itself capable of producing good grain and grasses as well as corn. This soil, however, is a little too coarse grained to develop into the strongest grass and wheat lands. Nevertheless it will without doubt maintain an excellent dairy and live

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When the forests of northern Wisconsin shall have given way to great square fields, it will be found that barley can be produced there which will rival that of our Canadian neighbors in quality. Our view taken July 9, 1895, shows a twenty acre field of barley grown by Chas. Parey, two miles northwest of Oconto, Oconto county. The large heads and thick stand gave a guaranty of about forty bushels of grain per acre.

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stock industry. This soil, too, while not as well suited to potatoes as the sandy loam, will nevertheless give good returns in this line of farming and this will be found particularly true along the border areas between the clayey loam and the sandy loam as at Grantsburg

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in Burnett county, where there is a well managed starch factory shown in the photo-engraving on page 35.

In illustration of what this soil has done it may be stated that the Grantsburg starch factory worked up the following amounts of potatoes:

In 1890 15,000 bushels.

In 1891 84,364 bushels.

In 1892 28,000 bushels.

In 1893 19,892 bushels.

In 1894 16,000 bushels.

In 1895 125,000 bushels.

In 1890, '92, '93 and '94 the good stock was all shipped out, the potatoes bringing a higher price than the factory could afford to pay to work them into starch.

While this clayey loam soil is one of reasonable endurance, it needs nevertheless to be judiciously and wisely managed from the start. A clover rotation needs to be started upon the land at once and farmyard manure should be made and applied as abundantly as possible. This needs to be kept in mind because the stock of soil nitrogen is seldom in excess of the needs of maximum crops and for the reason that much of the lands which will be open to settlement are such as have been fire swept and often more than once, so that a large amount of the forest mould has been destroyed.

Care must be taken, too, especially in the earlier years of reclamation, not to work the land too early in the spring when it is wet enough to have the soil puddled and its good



tilth destroyed. To avoid this as much of the plowing should be done in the fall as possible when the ground is usually dry enough.

### **5. LOAMY CLAY**

This soil is a still heavier and more clayey one than the last and one whose soil particles are still finer, there being more than 2766 million grains to the cubic inch. There are no soils in the northern part of the state better adapted to general farming and to dairying and stock raising in particular than these. The areas covered by these soils are found in western Polk and eastern Pierce, St. Croix and Barron counties, in the western part of the state; in Towns 33, R. 1 W., and 30 and 31, R.'s and 2 W. in Taylor county and covering a large in Marathon county; while still another large area is found in Iron and Ashland and eastern Bayfield counties, all of which are marked, 5, 5, 5 on the soil map. The same soil covers nearly all of Door and a part of Kewaunee county east of Green Bay. Usually these soils are not as stony as are those of the last variety, but like the last require much judgement in tilling them in the spring to avoid pudding.

### **6. RED CLAY SOIL**

This soil is the most peculiar, the finest grained and heaviest in the state. As its name implies its color, when wet, is a bright brick red. It is a soil which is so fine grained that a cubic inch contains more than 11950 million grains or more than 90 times as many as are found in the sandy soil type and more than four times as many as are found in the loamy clay just referred to.

Referring to the map it will be seen that the areas

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Our view shows the round barn of Chas. Tisch, Teagersville, Marathon county. This barn is ninety-two feet in diameter and twenty feet from stone wall to eaves. No large timbers are used. In a drive of many miles through Marathon county, it was found that in some

sections large barns were either in process of construction or had been erected in the last three years on from one-half to two-thirds of all the farms inspected.

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occupied by this soil are found bordering Lakes Superior and Michigan in Douglas, Bayfield and Ashland counties in the north and in Barron, Kewaunee and Door counties in the east, where they are indicated by the words "Red Clay" and by the numerals 6, 6, 6.

This soil owes its origin to a sediment which was deposited under water at a time when Lakes Superior and Michigan occupied a much higher level than they now do, and overspread the areas now covered by the soils in question.

#### **MANAGEMENT OF THE RED CLAY SOIL.**

In the management of these soils the great burden of effort should be to establish a more open texture and better tilth, that air may enter it more freely and more deeply, and that the water may drain away from it more rapidly and thoroughly. It was the universal observation regarding these soils, wherever we visited, that they respond remarkably to a heavy dressing of manure well worked in. Now this soil with its extremely fine texture is very close and impervious to both air and water, but the working in of coarse manure opens large air chambers and passageways which allow the air to come in contact with the seeds and roots of the young plants, a condition absolutely indispensable to their growth. It allows the surface water to go more quickly deep into the ground, where it is more serviceable and at the same time not injurious in closing up the air passages. Then again, in the earlier part of the season the warmth of the sun is confined to the upper six to eight inches of soil, where it is needed to give vegetation an early start, whereas when the surface is allowed to remain tight, hard and close, the heat is conducted deeply into the soil beyond the home of the early spring rootlets, so that the soil remains colder at the surface at the expense of warming a larger volume of it more deeply.

## CLAY BURNING.

Practical experience has proved that some clay soils are greatly improved in tilth, and in the ease with which they are worked by burning portions of it and spreading this over surface, plowing it in. It is claimed that heavy clay soils which contain a considerable quantity of lime respond particular well to this treatment. As the red marly clay of the region in question belongs to this type it seems very desirable indeed that the experiment of clay burning should be thoroughly tried on these lands. This may be urged with special emphasis in this region because there is so much brush-wood and old roots to be got rid of by burning that, if the soils are materially improved by the treatment, such rubbish comes at once to be a means of developing the resources of the country rather than a hindrance to it.

It has long been known in the arts that raw clay is attacked with great difficulty even by strong acids, but that when it has been heated, not too high, changes are wrought in it by which it becomes much more easily and rapidly dissolved by them. The same heating, too, has the effect of depriving the clay of its adhesive quality so that even when wet again it has no longer the power of sticking together. It becomes friable and readily crumbles into fine particles when dry. It seems, therefore, that two very important advantages come of this burning, namely, the rendering of the clay more soluble so that it yields its potash and its phosphoric acid more readily to plants; and then the improvement in

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Eau Claire county has been settled long enough to bring in all of the features of the older districts of the west in the way of fine residences, fine live stock and modern agricultural improvements generally. Our view shows a group of steers being fed on the farm of Chas. Silkworth, six miles from Augusta, Eau Claire county. The color, marking and the straight backs of these steers show that their veins carry shorthorn blood.

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tilth which allows air to enter the soil more plentifully, the water to percolate through it more rapidly and enables it to be worked more easily.

Several methods have been used in the burning of clay. One is to dig trenches 12 to 20 feet long, 3 feet wide and 30 inches deep, and then to pile this full of brush-wood or other combustibles, and after starting the fire to add clay so as to force the wood to burn slowly and without flame, care being taken to add more clay to those places where the fire begins to burn too rapidly. The essential point is that the clay be not allowed to become too hot, never going above a dull red heat. The object of using the trench is that it is easier to control the fire and prevent it from becoming too hot. As the fuel burns down more is added and more clay by turns until a large heap has been burned, and it is claimed by some men that they have succeeded in burning 50 cubic yards of clay with one ton of coal.

If it is preferred the clay may be thrown into ridges forming an enclosed rectangle and the fuel piled in this, and then by gradually adding to the rim as the pile gets larger a heap of the burned clay is obtained above ground. However the clay is burned, it is afterward spread on the land and plowed in.

To procure the clay in shape for burning most readily the ground is sometimes plowed late in the fall and then again in the spring when it is pretty wet so that it dries and forms into clods. The real object to be gained in the plowing is to get the clay dry so that it shall not take so much fuel to simply drive off the water, for the soil cannot get hotter than 212° F, until it becomes dry, and it takes a large amount of heat to evaporate the water which a wet clay may hold.

### **LATE FALL PLOWING.**

The action of the frosts of winter are very beneficial to heavy soils, but in order that they may have the strongest effect the ground should be plowed late enough so that the fall rains shall not cause the soil to run together, the object being to have as large a surface

as possible exposed and in a manner which will permit it to crumble and fall into smaller fragments.

Great care should be taken not to work these soils when they are too wet or the beneficial effects of the winter may be entirely lost. The disc barrow is one of the best tools which can be used in fitting these soils in the spring.

### **GREEN MANURING.**

Where corn and potatoes are to be grown on these heavy lands, it will be worth while to try the effect of sowing some crop in the fall like winter rye, which can be allowed to grow to a considerable height the succeeding spring and then be plowed under to leave the soil more open and warmer. The crop of green manure on naturally too wet lands has the double advantage of first draining the ground by taking from it that which it needs for its growth, and this is at the rate of more than 300 tons of water for each and every ton of dry matter produced on the land, and second, of adding fertility to the soil while it leaves it in better tilth. The danger in using this method lies in letting the green manure crop grow too long, especially should the early part of the season be dry, when it has a tendency to leave the upper soil too dry for the second crop to get a good start.

### **PLOWING IN NARROW LANDS.**

It will not be practicable for the early settlers on

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10,000 pansy blossoms. We trust our readers will not regard us as derelict if for the nonce we present a flower garden scene instead of one showing what the fields bring forth. Our view shows the flower garden of Jarvis White, Superior, Douglas county, taken September 7, 1895. There were literally thousands of pansy blossoms at the time of our visit, with many other beautiful garden plants all of the most thrifty character. The sweet peas trained to the kitchen walls stood fully eight feet in height, and were profuse with blossoms.

these lands to resort at once to under draining and yet the red clay lands would be greatly benefited by it. In place of this, where the fields are flat so that the surface waters do not drain away readily the plowing should be done in narrow lands, leaving dead furrows every two rods or less, and these should extend, of course, in the direction of the greatest slope of the land where that is possible. If low places occur where, in spite of the dead furrows, water will stand, it may often be possible to use the plow and run a cross furrow into some other dead furrow or a series of them which shall lead the surface water away. These remarks apply particularly to lands when they are plowed in the fall and great care should be exercised to see that the furrows and cross furrows, if there must be any, are well cleaned out when they are left and not choked at intervals. The great advantage of this surface drainage will come from the early carrying away of the water from the melting snow and the first spring rains, thus allowing the ground to come more quickly into condition to receive the crops.

#### **FREQUENT ROTATION WITH CLOVER.**

Great attention should be paid to frequent rotations with clover on these lands, both on account of the very beneficial effect which clover exerts in opening up the soil and in this way improving its natural drainage and the deeper penetration of air into it, and in adding needed nitrogen to the soil.

It should be understood that the great advantage of clover over timothy in opening up heavy soils lies in the fact of its larger fleshy roots which, after decaying leave wider channels which do not so quickly close up as do the fine, thread-like passageways left by the finer roots. Even on the clearings among the stumps where it is not intended to plow but seed directly to grass with or without grain an effort should be made to sow clover in good quantity. Of course these statements presuppose that clover will thrive upon these soils, a matter, however, which actual trials alone can determine.

## **THE USE OF FARMYARD MANURE.**

As has already been pointed out, great help will certainly come from the proper use of an abundance of farmyard manures, but a word needs to be said regarding its production and application. For these heavy lands it will be best to work in all the coarse litter which can be obtained and to apply this to the lands before it has been well rotted so as to get the advantage of its loosening effect.

Regarding the best time and best depth for applying manure on these soils it must be said that actual trials alone can give the final answer. It seems probable that coarse manure plowed in to a considerable depth in the fall will prove very helpful, but this assumption is based upon the expectation that on these new lands the mechanical action of the manure is more important than its food supplying capacity.

## **LIMING OF CLAY LANDS.**

The application of lime to soils of a heavy clay type has often been found helpful, partly through its destructive action on the colloidal constituent of the clay, which gives it its adhesive quality, thus causing the soil to lose its tendency to form into heavy clods and making it more open and more easily worked. In clays, too, which are made up of fragments of unaltered

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Garden of Chas. B. Howe, on farm of John Hass, 1 ½ miles southeast of Rhinelander, Oneida county, showing 1½ acres of onions in foreground. Our view, taken July 31, 1895, shows Mr. Howe in the foreground with armful of vegetables, cabbages, beets, onions and turpids, ready for the market. The pioneer home is flanked on either side with cord wood ready for sale. In the background is half cleared land with stumps and stones.

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feldspar to any notable extent, the lime acts upon the feldspar, setting free the plant food which is locked up in it in the insoluble form, and in this manner rendering the soil more fertile.

It must be said, however, regarding this red clay soil, that the chemical analyses given show it to be particularly rich in both lime and magnesian carbonate. In view of this fact, and the claim which is made that the chief influence of lime may be due to a soluble lime carbonate formed by the action of water and carbonic acid in the soil upon the carbonate of lime which it contains, it may be anticipated that liming could hardly prove helpful in this case. It is entirely possible, however, that the leaching action water has so completely removed the lime from the surface layers that it is really needed there, while the very impervious nature of the subsoil so completely shuts out the carbonic acid as to prevent the carbonate of lime in the lower soil from taking effect. If this view of the matter should prove to be correct, then liming might be helpful. Here again, then, the correct answer must come to actual trials on the ground.

In making these trials it would be best to work on small areas at first and to apply the lime in alternate narrow strips leaving land between not so treated, as standards which will show whether or not the lime has been effective. A common method of applying the lime is to lay small heaps upon the field where it is to be used and then to cover the heaps with damp soil, leaving it over night to slack, when it is spread over the surface. From one to three tons of lime to the acre is now a common allowance, though amounts much larger than this were formerly to be applied.

### **7. SWAMP OR HUMUS SOILS.**

Under this head is included the soils of all swamp and marsh lands, but in many cases the amount of humus or peat is now, after repeated fires, hardly sufficient to justify the case for the use of the term for them.



It will be seen from an inspection of the soil map that while there are few very large areas continuously covered by these soils, yet the aggregate amount of them in northern and central Wisconsin is very large, probably not less than from 1 to 1.5 million acres. Some of these lands are now covered with a growth of white cedar, other with tamarack and spruce, the latter being usually found upon the borders of both the tamarack and cedar swamps, while others still are simply sedge marshes of which are yearly cut for hay.

Then, again in very many other swamp areas which have been timber-covered, the fires have killed the trees, causing, all of the small anchoring roots to die and decay so that the winds have sometimes overturned almost every tree, leaving the lands in shape so that by picking up and burning the fallen trees such areas would be free from timber and ready to seed to grass or reclaim in other ways. In not a few cases of overturned swamp forests the fires have a second time swept across them, almost entirely clearing them.

It is very generally true that the swamp lands of northern Wisconsin are much drier than they were 7 to 10 years ago, a condition decidedly advantageous from the agricultural point of view. This condition is the result of a combination of causes which have conjointly brought it about. The summer during the past five years have been unusually dry and this has

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Our double is on the property of the South Bluff Cranberry Co., Daily, Wood county, taken September 23, 1895. The upper one shows buckwheat grown on cranberry swamp land burned over by the fires in 1894. From eight rods square, fourteen bushels of buckwheat were threshed during our visit of inspection. The lower figure shows an oat stubble field on marsh lands burned over the year before. An area of this land 5x20 rods is marked by men standing at the corners, as shown in the view. From this area twenty-eight sacks of oats each containing 1 1/2 bushels, shown in the view, were harvested.

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made the forest fires more extensive and repeated in the same section. As a result of the fires, which have consumed such large amounts of moss, peat, grass and twigs in the winter and spring precipitation now finds its way quickly into the streams and much less is held back, both upon the high lands, to percolate and flow by slow degrees into the swamps, and in the swamps themselves.

As a result of the dry seasons, too, in many of the swamps there has been a large settling of the loose moss and thorough anchorage of it to the soil below and this is a condition which reduces the capacity of the swamps for water.

Now all of these damages must tend permanently to make these swamp lands naturally dryer than in former years and this, too, even though the rainfall were to increase to such an extent as to be considerably above the normal for several years in succession.

### **THE ADVANTAGES AND DISADVANTAGES OF SWAMP LANDS.**

Many of these swamp lands have natural permanent and decided advantages over the higher lands which surround them. Their nearly universal disadvantage, as new land, is that they require draining before they can become agriculturally productive, except for hay. Then, again, some of these swamps, were they thoroughly drained, would not at once become productive because the peat which covers them is too thick, and so little decayed that a term of years must elapse, after draining, for the peat to decay, settle and become compact enough to permit crops of any sort to thrive upon them.

On the other hand when swamp lands have been adequately drained and where the organic matter is not too thick and is sufficiently decayed they are far superior for many purposes to the higher and naturally drier lands. The superior value of these lands when once reclaimed grows out of the large supply of organic nitrogen in the soil and the natural system of sub-irrigation to which they are perennially subjected. The sub-irrigation has its advantages not simply in bringing an abundant supply of water but in bringing with that

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water and dissolved in it ready for the use of the plant, a large amount of plant food of the in-organic types which has wasted from the surrounding higher lands into their drainage waters, and which are steadily traveling towards outlets in the drains of the swamp areas.

There are very large areas of swamp lands in parts of Adams, Juneau, Portage, Wood, Jackson and Monroe counties which, under the present conditions of rainfall, are dry enough to plow and bring under farming operations. Quite large areas of these lands even in wetter years will remain dry enough for agricultural purposes, provided the lower and wetter lands adjacent to them are drained.

On much of these lands the peat is thin while the subsoil below is a rather coarse sand, and the question may fairly be raised as to how long such lands will remain sufficiently productive for good permanent homes. That they are amply productive in their present condition there can be no question. But whoever ventures upon them in their untried condition does so at some risk, but how much, it is impossible to say.

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Views in and about Grand Rapids, Portage county. We here give the readers some idea of the paper industry in the new north. Our views show (1) the Centralia Paper and Water Power Co.'s plant, which makes twenty-two tons of paper and fifteen tons of wood pulp daily, employing seventy-five hands; (2) view in Grand Rapids. Here falls in the Wisconsin river have a water power estimated of over 7,000 H. P.; (3) G. R. Pulp and Paper Co., manufacturing twenty-five tons paper thirty tons of pulp per day, and employing eighty hands; (4) Nekoosa Paper Co., making thirty tons of paper, fifty-six tons pulp daily, and employing 135 hand. Thousands of cords of wood are supplied annually by farmers to these factories for paper and fuel.

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**Lands in Northern Wisconsin: How They are Described, Prices, Etc. F. W. Woll**

**Government Land Measures**

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For all legal or descriptive purposes the lands in the state are referred to a town line and a range line, crossing the state at right angles at its greatest width and breadth, by means of which all lands in the state can be located. The largest division of land is a township, which is six miles square; the towns are numbered 1 to 53 from the southern boundary line north, and are divided into townships by range lines running north and south. The range lines are referred to the 4th meridian, the ranges west of this meridian being known as range I to XX west, and those east of the same being known, as ranges I to XXIX east. The city of Antigo is thus located in town 31 north, range II east; the city of Barron in town 34 north, range 12 west, etc.

A township contains 36 sections or 23,040 acres. A section is one mile square and contains 640 acres; a quarter section is half a mile square and contains 160 acres. A 40 acre tract of land is one-fourth of a mile square.

Lands are usually sold in tracts of 40 acres or multiple thereof, except in case of land bordering on lakes, which are fractional sections and may contain more or less than 40 acres. These are called government lots.

The sections in each township are numbered 1-36, commencing at the northeast corner, as is shown in the diagram.

The sections are divided into quarters which are known as the northeast quarter, the northwest quarter, the southwest quarter, and the southeast quarter. The quarters are again divided in the same way, as shown in the accompanying diagram.

### TOWNSHIP

6 5 4 3 2 1 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32  
33 34 35 36

### SECTION

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NW¼ of NE¼ NE¼ of NE¼ N.W. Quarter. SW½ of NE¼ SE½ of NE½ S.W. Quarter. S.E. Quarter.

The description of this 40 acre lot would then, for example read as follows: The northeast quarter of the northeast quarter of section 1 in township 24 north, range 7 west.

### PRICES AND TERMS OF SALE OF VACANT LANDS.

#### A. GOVERNMENT LANDS.

The number of acres of vacant lands held by the federal government at the present time is shown in the table on page 66.

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A scene on the farm of F. D. Parish, 4½ miles southeast of Waupaca. This round silo (built after the plan directed by our Experiment Station) is twenty feet in diameter and twenty-five feet high. The corn is brought to the cutter from the field on sleds. This silo will be found of great use in northern Wisconsin because it can be filled with corn, which is the best material for silage, and this food will prove of high value to all kinds of stock, especially dairy cows and sheep, during the winter.

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This makes a total of 577,950 acres of vacant lands held by the federal government at the present time; added to the vacant state lands (see below), the number of acres of vacant public lands aggregate about one million acres.

*Vacant Government Land, Official Estimates July 1, 1895.*

*Kau Claire District.*

County. Acres.

Adams 1,480

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Buffalo 1,320

Burnett 92,480

Chippewa 8,400

Clark 2,080

Crawford 200

Dunn 2,960

Eau Claire 4,444

Grant 80

Jackson 12,240

La Crosse 760

Monroe 12,000

Pepin 200

Pierce 680

Polk 10,080

Price 5,360

Sauk 600

Sawyer 10,480

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Trempealeau 1,000

Vernon 160

Washburn 34,360

Total 205,240

### *Ashland District.*

Ashland 6,000

Bayfield 60,000

Burnett 32,000

Douglas 62,000

Iron 2,500

Sawyer 6,000

Washburn 30,000

Total 198,500

### *Wausau District.*

County. Acres.

Adams 28,720

Door 49

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Florence 5,680

Forest 15,200

Iron 5,840

Juneau 5,280

Langlade 2,000

Lincoln 12,680

Marathon 1,000

Marquette 600

Marinette 29,240

Oconto 4,400

Oneida 35,400

Portage 720

Price 10,040

Shawano 400

Taylor 670

Vilas 13,600

Waupaca 500



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Waushara 400

Wood 800

Total 174,210

Vacant government land in this state can only be taken under the homestead act, the preemption law having been repealed in 1891. According to the homestead law qualified persons may settle upon, enter and acquire title to not exceeding a quarter section (160 acres) of public land, by establishing and maintaining residence there and improving and cultivating the land for a continuous period of five years.

The following paragraphs give the necessary preliminary proceedings under the general statutes for making a homestead entry, prior to the passage of the act of May 26th, 1890:

1. When a person desires to enter a tract of land upon which he has not established a residence and made improvements, he must appear personally at the district land office and present his application, and must make the required affidavits before the register or receiver.
2. The homestead affidavit can be made before the clerk of the county court only in cases where the family of the applicant, or some member thereof, is actually residing on the land which he desires to enter, and on which he has made bona fide improvement and settlement, and when he is prevented by reason of distance, bodily infirmity or other good cause from personal attendance at the district land office.
3. In such cases the applicant must state in the affidavit the facts of settlement, improvement, and residence; what acts of settlement have been performed, and when made; the nature, extent and value of the improvements; what member or members of his

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family are residing on the land, the length of time such residence has been maintained, and the cause specifically why the applicant can not appear at the local office.

The act of May 26, 1890, modified the requirements of previous general laws, as above given, by allowing parties in all cases to make the preliminary affidavits for homestead entries within the county or parish before

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The yield of grain in the older districts of northern Wisconsin for the season of 1895 was enormous. Our view shows the grain stacks on the farm of August Schmidt and the neighboring farm at East Farmington, Polk county, taken September 9, 1895. While this view is introduced to show what the land will do as a grain producer, it is not recommended that our farmers rely on grain sold in the market for their income. Where the most grain is raised for sale in Wisconsin, the farmers are in the least thrifty circumstances, and where the most grain is fed to live stock they are the best off.

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any commissioner of the United States circuit court having jurisdiction over the county or parish in which the land desired is situated, or before the judge or clerk of any court of record of such county or parish, and to transmit the same, with their applications and proper fees and commissions, to the register and receiver of the district land office, thus permitting entries to be effected without personal attendance at the district office by any parties availing themselves of its provisions.

The land office fees and commissions payable when application is made are as follows:

The lands outside the ten mile limit of a railroad grant \$14.00 for 160 acres, \$13.00 for 120 acres, \$7.00 for 80 acres, \$6.00 for 40 acres.

The lands within the railroad limits, \$18.00 for 160 acres, \$16.00 for 120 acres, \$9.00 for 80 acres, \$7.00 for 40 acres.

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After fourteen months' residence on the homestead the homestead may commute his homestead to cash by paying \$2.50 per acre, if his land is within the ten mile limits of a railroad grant and \$1.25 per acre if outside the ten mile railroad limits.

There are also smaller isolated tracts of land in the state subject to entry under the timber and stone act. Applicants desiring to obtain land under the homestead act or wanting further information concerning other vacant government land in the state should address the Register of the government land office in the district in which they desire to locate.

There are at present three government land districts in the state, with offices at Wausau, Eau Claire and Ashland. The counties in each district still having government lands are given on page 66.

### **B. STATE LANDS.**

Lands held by the state are subject to sale at private entry after having been offered at public auction, on the following terms: The School, University and Agriculture College lands are sold on ten years' time; 25 per cent. of the purchase money being required in cash, and also interest on the 75 per cent. remaining unpaid, at the rate of 7 per cent. per annum, from the date of purchase to the first of January following, and the certificate fee of fifty cents for each forty acre tract; interest thereafter at 7 per cent. per annum, payable annually in advance. The Normal School and Drainage (swamp), and Marathon county lands are sold for cash. Vacant Lands Held by the State September 30, 1894.

School lands 47,831 acres

University lands 939 acres

Agricultural College lands 243 acres

Normal School lands 212,912 acres

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Drainage lands 230,439 acres

Marathon county lands 1,037 acres

Indemnity lands 37,890 acres

Total number of acres 541,291 acres

At the present time the total number of acres held by the state has been reduced to about 475,000 to 480,000 acres.

The prices for state lands range as follows:

School lands from \$1.00 to \$1.25 per acre

University lands from \$2.00 to \$3.00 per acre

Agricultural College lands \$1.25 per acre

Drainage lands (swamp) from \$.50 to \$3.00 per acre

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Twenty acres of fodder corn in the field of P. Langlais, two and one-half miles southwest of Rhinelander, Onieda county. When this view was taken, July 31, 1895, the tallest stalks in the field measured six feet nine inches in height. The growth of the corn was dense and very satisfactory. We commend this view to the careful consideration of the great army of doubters in southern Wisconsin who do not believe that a corn crop can be grown of about the middle of the state.

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Normal School lands (swamp) from \$.50 to \$3.00 per acre

Marathon county lands \$.75 per acre

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Section 3, chapter 332, laws of 1883, provides that any lands which the state owns may be entered by actual settlers at \$1.25 per acre, in quantities not exceeding 200 acres, under such rules, requirements, restrictions, conditions and provisions as the commissioners of public lands may be establish, to be approved by the governor.

Persons desiring further information concerning these lands should address Chief Clerk State Land Office, Madison, Wis.

### **C. COUNTY LANDS.**

In a number of northern counties lands have reverted to the county through the failure of the original owners to pay taxes upon them. In a few instances the counties are offering to give away some of these lands to actual settlers who will improve them, as it is to the advantage of all concerned to have the lands occupied and improved. While a large proportion of such lands are of low fertility and value, being very sandy, some are of very fair quality and well worthy of consideration. They should, however, in such case be carefully examined before being taken; while there is very little land in Wisconsin wholly unfit for cultivation, a settler can do much better than to take land in a low state of fertility.

Where there are vacant county lands they will be described and offered for sale in the immigration pamphlets issued by the various counties, and the seeker for such lands should look directly to the counties for further information.

### **D. PRIVATE OR CORPORATION LANDS.**

Beside the three classes of lands before described, government, state, and county lands, all lands in the state are held by individuals or corporations. Large tracts of land are held by lumber companies who have purchased them for the pine timber they carried, but having removed this are offering the lands to purchasers in any amounts desired. The companies are obliged to pay taxes on such lands, and since they bring no returns they

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may usually be bought at reasonable prices, and often on long time for deferred payments, at ordinary rate of interest.

The prices for such lands range from \$1.00 to \$5.00 or more per acre, dependent as usual upon the quality of the soil, the character of the timber remaining on the land, proximity to markets, etc.

A limited quantity of land ranging from poor to very excellent can be secured at very low cost, sometimes as low as \$1.00 per acre, from tannery companies who have removed all of the hemlock bark from the trees on the tracts offered, and prefer to dispose of the land at a nominal price. Companies and private individuals have furthermore come into the possession of tracts of land by various means, a common way being to secure land abandoned by lumber companies after removing the pine, by paying the delinquent taxes thereon. The lands so held are from fair to high quality from an agricultural point of view, there being fewer poor lands than in most other cases because the purchasers of tax-titles are directly interested in the quality of the lands they have secured and avoid as far as possible purchasing poor and worthless land. The price of such lands vary from \$2.00 to \$8.00 per acre.

The highest period unsettled lands are those carrying

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View of potato field with hard wood forest in background near Crandon Lake, Forest county, taken August 1, 1895. In the background we are shown the heavy forests of this section. The mammoth tree in the background is a basswood or linden. It is estimated that this tree stood eighty-five feet to the first limb and would give five sixteen-foot logs, scaling not less than 1,200 feet of lumber, board measure. The neighboring trees are hard maple, elm, and birch, all valuable for timber.

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timber. The pine lands have by this time been so carefully searched for by lumber companies and woodsmen familiar with this trade that it is useless now for strangers to look for lands carrying this sort of timber. There are, however, still tens of thousands of acres of land in northern Wisconsin, ranging from fair to first class for agricultural purposes, which carries hemlock or hard wood timber suitable for logs. We find on these lands hard wood trees of various kinds, maple, birch, elm, basswood, oak and, rarely, butternut and cherry, the logs of which have a value at the saw mill ranging from \$10.00 to \$30.00 per acre of forest.

By acquiring land of this character the settler can have a steady income from his forest, provided he harvests the timber judiciously. This crop is sure, and when properly handled there is little or no danger of fires injuring the forests. In some sections the maple trees stand so thickly and straight that they make the finest quality of sugar, and hundreds of dollars' worth of maple syrup can be sold annually from a quarter section from such tracts. The prices of these lands vary of course according to proximity to saw mills and railroad stations. The largest single tract of hard wood forest in this state is found reaching from the northern part of Portage and Waupaca counties northward to Shawano, Marinette, Langlade, Forest, Oneida and Florence counties. Considerable tracts of hardwood timber can also be found in many of the other sections, but scattered and in smaller areas. Considering the rapidity with which the forests of America are being cut down and destroyed., lands of this character are certainly very low-priced in comparison with their probable advancement in the near future.

In general, the settler can find lands of high value for agricultural purposes in any of the northern counties of our state at prices ranging from one to ten dollars per acre aside from timber value. Usually the owners of vacant lands will allow the settler to locate and begin operations by the payment of \$50.00 or \$100.00, and in a good many cases without any first payment; the rate of interest on deferred payments is usually 7 per cent.

## **HOW TO OBTAIN DEFINITE AND ACCURATE INFORMATION ABOUT LANDS.**

Persons becoming interested in the possibilities of northern Wisconsin for agriculture, who wish to get definite and exact information about lands in any particular county, should write for information to the secretary of the County Board of Immigration for that county. A list of the officers for the several counties is given in the closing chapter. Such a request will bring county pamphlets or circulars of information, maps, names of parties having land for sale, prices of lands, etc.

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View of Ashland, Ashland county; population 12,310. Our bird's eye view shows the ore docks, and mills on the water front. Above appears the iron and steel plant, the summer hotel and the Knight block. In 1895 the eight saw mills cut 144,000,000 feet of lumber; from the docks were shipped two and one-fourth million tons iron ore. The iron works produced 41,000 tons of iron, requiring 85,000 cords of wood for charcoal, purchased from the settlers clearing farms. 1,632 vessels were required to carry the iron ore, lumber and iron shipped from Ashland, these products having a value of \$13,000,000.

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## **Field Crops in Northern Wisconsin. W. A. HENRY**

### **TIMOTHY.**

The first hint that northern Wisconsin might some day be an agricultural country was given through grass seeds accidentally falling by the wayside in the woods where hay was being hauled to the logging camps. Cutting the roadways through the forests let in the sunlight, and where the timothy seeds fell, grass plants sprang up which grew amazingly well, the stems often reaching a height of five or six feet and bearing great heads of seed. The luxuriance of these volunteer grasses was a great surprise to the lumbermen who were not slow in seeing the lessons taught and using them to their own advantage. Here and there in the woods, often far from civilization, tracts were cleared from the forest and grass seed



sown among the stumps for the purpose of supplying horses used in the timber camps with pasture as well as hay, which must otherwise be drawn long distances to the logging camps in the woods, from points on the railway to which it had been shipped.

The timothy growing in the clearing thus made yielded abundantly and gave returns fully up to the promise made by the volunteer plants along the "tote roads." As time went on it was found that lands seeded to timothy remained free from weeds and gave large yields of fine hay for periods lasting from six to twelve years before re-seeding or change of crop was necessary. The high prices paid at the lumber camps for hay and provisions of all kinds brought in settlers here and there who, experimenting further with timothy, gained equally good results with the lumbermen, and thus this plant has been of the highest importance over the whole northern country where the timber was heavy. It may be said without fear of contradiction that no section of the United States can surpass northern Wisconsin for the production of fine timothy hay, and nowhere else can this crop stand longer without re-seeding and give heavy returns of hay each year.

Timothy hay is the main reliance of the settler for cropping among the stumps. When a piece of land has been "chopped off" and the brush and logs removed, the stumps are too thick for the cultivation of crops requiring annual plowing of the soil and frequent cultivations. Grass seed sown on the land among the stumps and brushed in or covered with a light drag, springs up in a short time covering the field with green; the first year a fair crop of hay is obtained and afterwards a full crop. Of course this grass must be cut with a scythe for the stumps are too numerous to admit the use of the mower with comfort or advantage. While the grass is growing the stumps are rotting and after a few years they are easily removed, unless of pine, and then the sod can be turned under and other crops grown. Wherever there are lumber camps, timothy hay is a very profitable crop, finding a good demand in the local market. Because it yields well among the stumps on newly cleared lands and can be fed to

Stacking hay on the farm of H. D. Dutcher, near Northern Chandon, Forest county. View taken August 1, 1895. Hay is one of the valuable crops in northern Wisconsin because of the large yield and the ready market usually found for it in the logging camps and the lumbering towns and cities. No region can excel northern Wisconsin for the production of fine timothy hay.

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horses and cattle alike, timothy hay will always be one of the first crops grown by the settler. Its use, however, should be more restricted than is now common in those sections where the stumps have given way to cleared fields and the logging camps passed to districts further on. Farmers should learn that grasses to be most profitable should belong to a rotation lasting not over five or six years; further, these grasses should be grown along with red clover, which will help greatly in maintaining the fertility of the soil.

### **RED CLOVER**

Red clover, the companion plant of timothy, flourishes in northern Wisconsin where little difficulty is experienced in obtaining a good "catch" and securing a large growth for hay making, with good pasture following the period of mowing. The settler should remember that clover completes its work by the end of the second year from seeding, and that land carrying it should be broken up not long after that time for some other crop. There is no better hay for a dairy cow or for sheep than that from red clover; and settlers who are planning to become dairy farmers or sheep raisers should learn how to grow good crops of clover, and convert them into first-class hay. Clover should be sown with timothy for feeding on the farm, for some timothy hay is excellent for horses and better crops are obtained from the mixture of clover and timothy than by sowing each separately.

Each fall after the clover has been removed it gives a very fair cropping of pasture on which a herd of dairy cows or a flock of sheep may be maintained for some time. Clover enriches the land in a way not equalled by any other plant grown on the farm and a crop

should precede the planting of corn and potatoes. A whole chapter dedicated to the farmers of northern Wisconsin might well be written at this time and in this book on the great value of clover, for if they will only come to appreciate the importance of this plant it will prove a blessing to them beyond all computation.

### **WHITE CLOVER**

Our examination of the various counties revealed the fact that white clover grows everywhere in northern Wisconsin, patches of it being found along the "tote roads" in the densest forests, far from the habitations of man. Often clover plants are found at points in the forest far away from roads where the sun breaks through and reaches the ground, proving a great mystery to the finder who wonders how the seed could have been brought to such isolated spots. White clover is an excellent pasture grass for dairy cows and sheep, and it also binds the soil together, preventing washing. Its almost universal presence in northern Wisconsin and the great, rich rank growth which it makes tells much that is encouraging to the person searching for evidences whether the land is really productive or not.

### **KENTUCKY BLUE-GRASS.**

What is called Kentucky blue-grass farther south is generally known as June grass or blue-grass in Wisconsin. We found in our studies of northern Wisconsin that Kentucky blue-grass grew in every county of that whole section. Like timothy and red clover it was introduced through chance seeding and occasionally it has been sown for pastures by the settlers. Kentucky blue-grass is now common everywhere, being

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Red clover remarkably well in northern Wisconsin, a fact of the highest importance since it insures permanent fertility to the soil. Our view, taken September 3, 1895, shows a haying scene on the farm of Fred Judas, three miles south of Medford, Taylor county, where the second growth of clover was being converted into first-class rowen or hay. The mower and

hay rake show that good agricultural machinery is common in northern Wisconsin. Quite commonly all of the family join in the harvest work.

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found in abundance along the road sides and in all the clearings.

### **PASTURES.**

A practical farmer will readily realize that a country in which timothy, Kentucky blue-grass and red and white clover flourish is a natural pasture region, and such is northern Wisconsin. The prudent farmer will, as early as possible, cease selling hay from his lands and devote a portion of his former meadows to pastures; this plan will enable him to keep more stock and to furnish them tame feed instead of forcing them into the woods to live on what they may find there. Stumps do not trouble in pasture fields and grass grows among them as well as anywhere. By embarking early in dairying or sheep rearing the settler will have need of pastures. Often where the fires have burned over the wood lots the lands are so cleared from brush and the sun shines in so freely that grass seeds can be sown which will spring up without difficulty and make fine pastures. There are at this time hundreds of thousands of acres of land in northern Wisconsin, carrying more or less dead timber which can be converted into good pastures at a merely nominal cost. This conversion will accomplish much good, for by turning the lands into pastures live stock can be supported and these animals will keep down the brush and seeding trees which, if allowed to spring up will again convert the districts into a wilderness. Those who are considering the purchase of lands in northern Wisconsin will do well to hunt up these "burned districts" with a view of securing large pasturage areas at the mere cost of sowing the grass seed.

### **INDIAN CORN.**

Farmers in southern Wisconsin generally believe that the northern limit of the corn belt is somewhere south of the middle of the state. The isothermal lines shown in the maps tell us

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that the lines of high summer temperature which make corn possible do not cross the state in a due east and west direction, but bend sharply up to the northwest. As a consequence corn is practically as sure a crop in a large part of St. Croix and southern Polk counties as in Waukesha county, though these first named counties are far north of the latter. We present a number of views in this Hand Book showing corn crops just as they were found in our visits during the summer of 1895. The reader is asked to study these views carefully and note the conditions of the crop.

It may be stated with every assurance of reliability that on the warmer soils corn can be successfully grown over much of northern Wisconsin. Where the clearings of the settlers are yet small, with tall forests all about them, light frosts are quite common in August and these are usually severe enough to nip the corn and prevent its maturity. These frequent frosts in the small clearings of the settlers have led to the conclusion in many cases that corn can never be grown on their lands. Investigations shows that where large areas have been cleared from the forests, frosts are less frequent. Old Settlers now living in Dodge, Fond du Lac, Calumet and other counties in this state tell us that when they first settled in these counties corn was quite frequently cut down by the August frosts, and that the belief was quite current in those early times that these counties could never become corn-growing sections. Corn is now ripened in these counties with as much assurance of ripening as in Illinois.

At the far north and all over northern Wisconsin

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If asked for an opinion, most of the farmers in southern Wisconsin would affirm that Indian corn will not ripen a crop north of Green Bay. Our view taken on the farm of S.D.D. Newton, five miles northwest of Peshtigo, Marinette county, September 5, 1895, will help correct this error. The corn in this field was planted June 8, and on September 5 the ears were glazed and harvesting had begun. We note that the McCormick harvester is cutting

and binding an excellent crop of corn. The bundles are drawn to the barn and placed in the round silo, located in the middle of the barn.

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where the soil is a heavy clay, corn will probably never be grown for the grain with any certainty of success. Even quite well north, however, where the soil is of a warm sand loam character, Indian corn may be grown with very fair to reasonable certainty of ripening as soon as the lands are cleared off in large areas. The settler advised to plant flint varieties of corn since they will ripen further north than the dent varieties and yield equally well in grain. It is very important that seed be secured from districts as far north as possible. The settler should likewise remember that ears of corn for seed can be taken from the stalks by the time the grains of corn are full sized and while yet in the milk, provided, always, that such ears are carefully and fully dried by gentle stove heat, as they always should be to secure a high per cent. of germination. Another point of great importance to the corngrower at the north is the fact that corn does not deteriorate in quality by being grown on the same farm for a long period of years. Upon securing a variety of corn, or one which is even fairly satisfactory, the farmer should proceed to grow his own seed corn year after year, never changing if possible even with his neighbors. Of course only such ears should be selected as seem best adapted to the particular farm on which the corn is being grown.

Corn is not being cultivated by the settlers in some of the older parts of northern Wisconsin to nearly the extent that it should be for the reason that many of these settlers are foreigners who have come to Wisconsin from countries where corn is not grown as a field crop, and, being unfamiliar with its cultivation, they do not understand how to plant and care for it. The fact that these settlers do not grow corn has led many later ones to incorrectly think that corn can never be grown in certain districts.

Where corn will not ripen satisfactorily, the settler can still plant it profitably for the large amount of forage it will yield. All classes of settlers should grow some fodder corn for the great abundance of excellent forage which it yields for their horses, sheep and cows.

### WHEAT

This cereal was once the main support of farmers in southern Wisconsin, where large returns of fine grain were secured in the early days of settlement. Gradual deterioration followed in both the quality and quantity of the grain, and this was accompanied by falling prices; then came hard times and our farmers were forced into animal husbandry. Having given up wheat growing, our farmers in the southern part of the state have again reached prosperity and are getting on better than ever before. Spring wheat is one of the crops which northern Wisconsin farmers should let severely alone, for so long as anything like present prices for wheat prevail, every bushel of this grain is grown by our people at an actual loss. Parts of St. Croix and Polk counties grow large amounts of wheat, and though these counties have as rich lands as any to be found in the state, the wheat growing farmers are not prosperous as can be seen by an examination of the farm buildings and other evidences of the condition of these people. It may be said without a fear of successful contradiction that where Wisconsin grows the most spring wheat the farmers are the poorest, and where no wheat is grown but animal husbandry wisely followed instead, the farmers are the best off.

Winter wheat may be grown in a few cases by the

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View of a sixty-four acre oat field of Edward Dascam one of one-half miles northeast of Antigo, Langlade county, taken July 30, 1895. The hardwood forest covering this land was chopped off in the fall of 1894 and winter of 1895, the saw logs bringing enough to pay for clearing the land, fencing it and putting in the oat crop. The oats of this field stood from five to six feet high, as shown by the figures of the men standing in the field; the many stumps

were completely hidden from view. The small view at the right shows a single cluster of the oats reaching higher than the men's heads. Oats do not usually grow so tall as this in northern Wisconsin, but the soil and climate are very favorable to large yields of fine grain.

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farmers in northern Wisconsin, but they had better let even this grain alone.

### **RYE.**

Rye is a better crop for the farm than winter wheat, because when sown with it grass seeds flourish and give a better catch than with wheat, thus insuring crop good hay crops to follow. Rye is also a surer crop than winter wheat, and the grain can be used either for bread or for feed, while the straw makes the best of bedding for live stock. The settler can often grow a crop of rye to considerable advantage and as a consequence this crop is found quite commonly over northern Wisconsin. Rye growing for the purpose of selling the grain is not to be recommended.

### **OATS.**

Oats do exceedingly well in northern Wisconsin because of the cool summer climate which allows the plants to grow more slowly and does not force the ripening of the grain, as is apt to occur farther south where the days are hotter. We observed in our studies of northern Wisconsin what the period of seeding with oats lasts must longer than in the southern part of the state. Oats may be sown into June at the north and yield a good crop of hay and sometimes grain, in which case the grain may not ripen until September. We found the oat crop of northern Wisconsin for the year 1895 the finest ever seen by us. The views of this crop presented in this Hand Book will give the reader a good idea of how the fields appeared in this year of great crops. The returns for oats in northern Wisconsin during the year 1895 ranged from forty to one hundred bushels per acre, and yields of 130 bushels have been recorded. The farmers of northern Wisconsin will find the oat crop a very satisfactory one since large yields of grain are the almost certain reward for planting,



and there are always good markets for what may be raised. Large quantities of grain are required by the work teams in the logging camps, milling and mining centers. There is no grain superior to oats for horses, dairy cows and sheep.

### **BARLEY.**

Barley has not been extensively grown in northern Wisconsin up to the present, but judging from the success it has attained Canada and the good quality of the grain grown further south in our state it seems reasonable to suppose that this section will some day produce large quantities of superior barley. Fields inspected during the past summer revealed all the qualities of a first class barley crop. The straw was stiff, the heads large and the grains plump and bright at time of harvesting. Barley is a most excellent grain for feeding stock as shown by the fact that it is the common stock food for farm animals in Great Britain and northern Europe. In Wisconsin a prejudice exists in some places against feeding barley to farm animals, the statement being sometimes made that it is poisonous. This notion is entirely erroneous, and our farmers should put it aside as too trivial to be considered for a moment. The farmers of northern Europe and Great Britain have fed barley successfully for too long a period to permit of any such statements being entertained by us.

### **PEAS.**

The pea crop flourishes in northern Wisconsin in a way perfectly surprising to farmers who have only seen this plant growing further south in the corn belt.

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View of a pea field of Joseph Seipold, three miles northeast of Antigo, Langlade county, taken July 30, 1895. The peas in this field stood fully five feet in height. This crop flourishes in northern Wisconsin to a degree that greatly surprises those located further

south. The soil, and especially the climate, of this great region is eminently adapted to this crop, which yields from twenty to forty bushels of peas, free from bugs, per acre.

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Where corn flourishes best, the sun is too hot for the pea vine to do its best and it usually grows small and spindling, and mildews badly; then, too, over most of our country there is a beetle laying its egg in the peas, which develops into larvae; these feed on the pea grains much to their injury. We all know the reputation of Canada for producing fine peas in large quantities, and northern Wisconsin will prove a strong rival to our neighbor in this particular crop. As shown in one of our views, the peas were found standing breast high in Langlade county, every vine carrying many pods, each loaded with peas. Another indication of how favorable this country is for pea growing is found in the way the sweet pea vine flourishes, at the north. At Madison, Wisconsin, sweet pea vines, cultivated for the bloom, grow about waist high under favorable condition and with good care; at West Superior we found sweet peas growing in many of the flower gardens of the city and in every instance when given even fairly favorable conditions, the vines reached from six to nine feet in height.

The pea crop of northern Wisconsin will prove a very fair substitute for Indian corn, through the ease with which it is grown and the large yields of forage and grain returned. For dairy cows a limited quantity of pea meal may be fed with advantage, while for sheep they are a most excellent food threshed or unthreshed. Hogs may be turned into the pea field to do their own harvesting and will furnish fine pork if fattened off with a little corn or barley after their run of a few weeks in the pea field. They may also be fed with pea meal mixed with barley or corn. As a region for growing peas, the northern part of our state greatly excels the southern portion.

## **ROOT CROPS.**

Roots grow remarkably well in northern Wisconsin, for the same climatic conditions favor these that give pea crops. The cooler days with the bright sun causes the mangel-wurzel beet, rutabaga and other roots to push ahead rapidly and produce roots of large size, tender flesh and with the very finest flavor. When the culture of root crops has been properly developed in our new north, enormous quantities will be used by stockmen for feeding dairy and sheep. There will then be no need of shipping car loads of rutabaga turnips from Canada to Wisconsin for table purposes as is now done.

### **RAPE.**

The use of the rape plant in Wisconsin has been brought about mainly through the recommendation of our experiment station, and we strongly urge northern Wisconsin sheep raisers to experiment with this plant. The rape plant resembles the rutabaga turnip in the appearance of its leaves; it differs from it in the fact that it produces no enlarged root, but instead throws all of its strength into the large luxuriant leaves which are much relished by sheep and cattle. The rape plant is in common use in England and Canada where the cool climate favors its large development. In England rape is said to give mutton its finest flavor. Rape seed is inexpensive, easily obtained and the plants are grown with little or no cultivation beyond the mere sowing of the seed. Mutton from sheep fed on rape in northern Wisconsin will some day have a reputation in all the great cities of America, if our northern farmers will only work intelligently in that direction.

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Our view taken September 27, 1886, shows the corn field of Mr. Jas. E. Seed, St. Croix Falls, Polk county. The size and number of the rich, yellow, "Yankee" pumpkins should satisfy the most exacting farmer who appreciates that crop. The many leaves show that the frost has not yet done its work. Unimproved lands in the vicinity of this farm sell for from \$7.000 to \$10.000 per acre.

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## **PUMPKINS.**

As shown in our views, the yellow "Yankee" pumpkin grows well in northern Wisconsin wherever corn flourishes. At Marinette, Marinette county, at Crandon in Forest county, at Phillips in Price county, and

View of a tobacco field at Minong, Washburn county, taken August 3, 1894.

in Polk county large, yellow "Yankee" pumpkins were found fully ripe during the last days of August and early in September. These well-known farm products are highly appreciated by farmers who are in the habit of searching out a variety of foods for their live stock and are happiest when their farm animals have the most to eat of the best that the soil furnishes.

Nothing will give readers a better idea of the climatic conditions of northern Wisconsin than this fact that yellow "Yankee" pumpkins were found by us in abundance at points well to the north.

## **TOBACCO.**

As shown in our views, the tobacco was found which had grown and ripened its seed in Iron county. Tobacco was also found successfully growing the year before at Minong, in Washburn county. It is doubtful whether this crop will prove really profitable in northern Wisconsin, for it is not now a paying one in the southern part of the state. We have shown views of it not to get our farmers interested in its growing, but rather to help form correct notions as to soil and climatic conditions at the north.

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View of potato field on the farm of J. C. Lewis near Antigo, Langlade, county, July 30, 1895. The character of the original forest in this section is shown by the beautiful hard maple grove in the background. The land now occupied by the potato field was sown to

grass after the trees has been removed and yielded large crops of hay for several years; then when the stumps were rotten they were pulled out, burned, and the land plowed and planted to potatoes June 15, 1895, resulting in the fine crop as here shown.

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### **Potato Culture in Northern Wisconsin. E. S GOFF.**

As transportation facilities increase, the production of staple commodities tends to localize. California, with its frostless climate, furnishes many of the fruits consumed by our whole country. The prairies of the Mississippi valley, rich with the humus deposits of unnumbered centuries, supply much of the world with corn and wheat. If we may judge from present indications, a vast potato growing section is being developed in northern Wisconsin. The magnitude the potato industry has already attained in certain counties of our state, is but an evidence of what is to come when our thousands of acres of ideal potato soil, as yet unimproved, are put under the plow.

### **MAGNITUDE OF THE INDUSTRY.**

Some idea of the present magnitude of the potato growing industry in central Wisconsin may be gathered from the following data, kindly furnished by the traffic manager of the Wisconsin Central Railway, which traverses parts of the Wisconsin potato belt. It should be remembered that these figures do not represent the total production of potatoes in the counties named, but only the amount carried to market by a single railway. Several other railways also traverse parts of the potato belt.

The following numbers of carloads of potatoes were carried by the Wisconsin Central Railway during the year 1893, 1894, and up to December 1, 1895, from the counties named:

1893	1894	1895	Waushara County	1,675	1,202	1,231	Waupaca County	1,571	1,384	1,144
			Portage County	1,383	1,051	893				

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The total shipments from Wisconsin over the entire line of the Wisconsin Central Railway for the years named were:

1893, 5,478 carloads, estimated in bushels 2,739,000

1894, 3,907 carloads, estimated in bushels 1,953,500

To Dec. 1st, 1895, 3,813 carloads, estimated in bushels 1,906,500

### THE SOIL ADAPTED TO POTATOES.

The potato succeeds best in a soil that, while well supplied with plant food and moisture, is thoroughly well drained, and does not harden on drying—in other words, in a fertile, sandy loam, the soil possessed by entire counties of northern Wisconsin. Such a soil is of the easiest tillage, is rarely too wet to work, is readily seeded to clover when desired, and responds liberally to manures. Hundreds of square miles of such soil abound in our state that lie so nearly level as to facilitate the use of all modern farm machinery, and that may be purchased at very reasonable prices. These soils are capable of producing potatoes of excellent quality, as is shown by the fact that the prices commanded by Wisconsin potatoes in the Chicago market

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Diagram illustrating prices received for potatoes by farmers of Waushara county, Wis., from January 1, 1895, to December 1, 1895. Each horizontal line represents one cent per bushel, and each vertical line represents the beginning of a month. The prices are given from October 1st to May 1st of each year, and were taken from the *Plainfield Weekly Sun*. The range of prices for the different varieties and qualities. The shaded part at the bottom shows the estimated average cost of growing a bushel of potatoes in Waushara county, viz, 12 cents.

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are unexcelled by those from any other section of the northwest.

But will potato culture on an extensive scale prove profitable in Northern Wisconsin? Will not the business be overdone? Can so bulky a product as potatoes be economically shipped long distances? Questions like these will confront the cautious homeseeker, and they must be fairly met.

### THE PROFITS OF POTATO CULTURE

In regard to the first question, it can be readily shown that potato culture has proved profitable on an extensive scale in Central Wisconsin. The accompanying graphic diagram indicates the prices per bushel of potatoes that were paid to the farmers residing in the vicinity of Plainsfield, Waushara county, for the ten years previous to the present season, while the shaded part at the bottom represents what is estimated to be the average cost of a bushel of potatoes to the grower. It is evident that while in a few cases the selling price has descended below the cost price, in the main it has ranged so far above it as to render potato growing highly profitable. It may be questioned by some if potatoes can really be produced at a cost of twelve cents per bushel. It is certain that they have often been produced at a lower price than this. In the Rural New Yorker for Dec. 7, 1895, (p. 813), a crop in Iowa is mentioned of which the computed cost was ten cents per bushel, including rent of land, and for the moderate yield of 175 bushels per acre. It is true that many per bushel. But even if we estimate the cost at twenty cents per bushel, it is clear from the diagram that the business would still have been highly profitable. The cost depends very much upon the yield secured. It is fair to add, however, a fact which our diagram does not show, viz., that in seasons of abundant potato crops, when the prices drop below the average, the cost of production is also lower than usual, because the expenses of growing an acre of potatoes that yields 300 bushels are little more than for one that yields seventy-five. On the other hand, in seasons of small crops, and consequent high cost of production, the prices received are also usually high in proportion. Improved potato machinery is doing much to cheapen the cost of production. Already machines for cutting

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and planting the seed potatoes are in quite general use among the larger growers. The potato beetle is also kept in check by machinery operated by horse-power, and successful digging machines are now in use. A machine that will dig, pick up and assort the tubers is by no means an improbability. Already potatoes are assorted by machinery.

As to the probability that potato growing may be overdone, we can only judge the future by the past. No other crop has been longer grown by American farmers, yet it is generally admitted that, one year with another, on good potato land that is not too high priced, and with economical methods, potatoes have proved fully as profitable as any other staple crop, while in regions specially adapted to them, they certainly have proved more profitable than most other crops. Instances are cited in central Wisconsin where land has been paid for by a single potato crop.

That potatoes may be, and are, shipped long distances is readily shown by a study of the market reports of any of our large cities. In the Chicago markets, potatoes from New York, Tennessee, Missouri, Iowa, Dakota and Wisconsin are frequently quoted,

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Starch factory at Grantsburg, Burnett county, with wagons loaded with potatoes about it, as seen on our visit September 28, 1895. In 1890, 15,000 bushels of potatoes were converted into starch at this factory; in 1891, 84,000; 1892, 28,000; 1893, 19,000; 1894, 16,000; 1895, 125,000 bushels. In years with good prices only the culls and a limited amount of potatoes are worked into starch, the bulk of the crop being shipped out. This year wagons were forced to wait as long as three days before they could deliver potatoes at the factory. An additional factory will probably be built.

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as well as those from farther south. It is well known that potatoes have sometimes been imported from Europe. The tubers are shipped from Central Wisconsin to Milwaukee and Chicago during the winter months in cars provided with stoves.



## **OUTLETS FOR THE SURPLUS.**

It must be admitted that overproduction of potatoes sometimes occurs, but in such case the surplus need not be a total loss. Experiments have fully proved that the tubers possess considerable value as food for stock, and in districts where the crop is extensively grown, starch factories have been located at certain points that are always ready to utilize surplus potatoes. Not less than six of these factories have already been located in central and northern Wisconsin,\* and in the past season these have materially assisted in relieving the congestion of potatoes in their vicinity, the factory at Waupaca alone working up nearly 200,000 bushels. These factories are able to use potatoes that are too small for market, and even those that are slightly damaged by frost or decay, and the prices paid for starch potatoes is, on the average, more than they are worth for feeding, and generally a little more than the cost of production. At the Waupaca factory they have ranged, during the past five years, from eight to eighteen cents per bushel, averaging for the different seasons about fourteen cents.

\* Starch factories were in operation the past season at Waupaca, River Falls, Asseo, Chippewa Falls, Black River Falls, Grantsburg and possibly at other points.

From the U.S. Reports of Commerce and Navigation, it appears that the imports of starch from foreign countries during the past three years amount of something over three and a half millions of pounds per year, and we are informed by the Chief of the Bureau of Statistics that this is almost entirely potato starch. We may infer, therefore, that the potato starch business has not yet reached the limit of its development, and it is by no means improbable that additional factories will be located in our state.

## **THE OPENING FOR YOUNG MEN.**

the young man with sound physical health, with a willingness to work and with a little capital, who is looking for an opening, will not go astray in purchasing a piece of good potato land in northern Wisconsin, and in making potato growing his specialty. He should

of course select land favorably located for shipping, and preferably near a starch factory, and, if without experience in the business, he should be willing to learn from those who have already succeeded in it. With the proper application of energy and intelligence, he may hope for as high a degree of success in potato culture in northern Wisconsin, as in any other rural occupation, and in any other section of our country.

### **POTATO GROWING WITH MIXED FARMING.**

The potato grower should never rely upon this one source of income, but follow intelligent mixed farming. By keeping dairy cows, mutton sheep, or both, as well as some hogs, he is certain of a large amount of manure which will go far toward keeping up the fertility of the farm. To feed these animals there is no forage equal to red clover, and red clover is beyond all comparison the best crop for keeping up the fertility of the land. By having milk to sell at the creamery or cheese factory, or butter, if he is a private dairyman, there is

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Yield of one square rod in the potato field of Mr. Henry Kuepper of Minocqua, Vilas county. The potatoes shown in the picture weighed one hundred and seventy-four pounds, or at the rate of about four hundred bushels per acre. The stumps and logs in the background indicate the character of the timber that formerly grew on the land. View taken September 26, 1895.

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a monthly income throughout the year. With mutton there are the three crops of wool, cull sheep and lambs each year. Under this system the fertility of the farm can be kept at a high standard, and the area devoted to potatoes will not be greater than can be well cared for. The potato grower should plan to have a part of his land in clover, another part in grain, a third in pasture and a fourth in potatoes; thus practicing a rotation of crops. The prudent grower will plant about the same number of acres to potatoes each year, regardless of whether the price for this crop ruled high or low the preceding year. If prices

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are low, he can stand the depression without material loss because of his other incomes; if prices are high, he has a considerable sum to lay up for a rainy day, or for improvements.

There are many imprudent potato growers even in northern Wisconsin. When prices are high they become excited at the large returns received by successful growers, and the next spring sees them buying seed, usually at a high price, and putting in a large acreage of potatoes—more than they have the means or ability to properly care for in many cases. If prices are low that fall, these growers receive a set back from which it takes them years to recover and they give up potato growing in disgust, only to come back to it when others have again succeeded in getting good returns.

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The Menomonee River Boom Company, employing many men, maintains its own garden near Marinette, Marinette county. Our view taken September 5, 1895, is a whole chapter of the agricultural and horticultural possibilities of the newer Wisconsin. The gardener with wife and child stands beside the sweet corn, which bears numerous large ears ready for use. In front of them is the table on which we observe cabbages, carrots, rutabagas, squash, onions, cucumbers, etc., all grouped so as to give us a good idea of what can be produced in a well cared for garden in this section of the state.

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### **Horticultural Possibilities of Norther Wisconsin. E. S. GOFF.**

In the ideal rural home the part played by horticulture is always conspicuous. Fine fields of grain, choice herds of cattle, and improved farm machinery contribute to the ideal farm, but they do not constitute the whole of the home picture. The vegetable garden. The strawberry plat, the apple trees, and the flower-beds inclosing the modest dwelling, are what make the country home home-like.

Among the many questions that confront the home-seeker and his family who would locate in northern Wisconsin, those that relate to horticultural possibilities are by no means least

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important. "Can we have a good garden?" "Can we raise our own berries?" "Can we have our own orchard?" "Can we raise flowers?" These questions, whether asked by the wife, the husband or the children, should never be ignored.

The rapid development of cities is producing a corresponding demand for the products of commercial horticulture, and a constantly increasing number of people are turning their attention to the growing of fruits and vegetables as a business. We write for the benefit of this class of home-seeker as well as for those who propose farming, and we describe the horticultural possibilities of northern Wisconsin the more willingly from a suspicion that a prejudice exists in the minds of some that would do injustice to the resources of the northern portion of our noble state.

In another chapter, Prof. King has written of the climate of Northern Wisconsin. It remains to discuss here the extent to which the so-called horticultural crops may be grown in this section of our state, and the present and future market prospects for the produce of such crops.

### **THE CROPS THAT MAY BE GROWN.**

So far as the summer season is concerned, it may be broadly asserted that any crops that succeed in other northern states will be found to succeed equally well in northern. Even the garden plants of tropical origin, such as sweet corn, melons and other cucurbits, tomatoes, peppers and eggplants, when started reasonably early, mature in the average season throughout the state except in a few locations that, owing to peculiar topography, are specially subject to untimely frosts. As to the so-called small fruits, including the strawberry, raspberry, blackberry, currant and gooseberry, it may be affirmed without fear of contradiction that no part of the union offers better opportunities for their profitable culture than portions of northern Wisconsin. All these fruits are native throughout this region, which proves the adaptability of the soils and climate to them. The plants are very fruitful and the fruits is unsurpassed in quality. In culture, small fruit plants are more likely

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to be injured in winter than in their native haunts, as they are not so well covered by snow. On this account, it is customary throughout the greater part of Wisconsin as in the other northwestern states, for growers to pro-

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Our artist shows us a scene in the iron mining town of Hurley, Iron country, September 27, 1895. It is in the garden of Joseph LeFevre. In the foreground appears cabbage and in the background sweet corn; intermediate, with Prof. Goff standing as unimpeachable witness, are fine rows of Havana seed leaf tobacco standing early four feet high, Prof. Goff assures us that the seed of this tobacco was practically ripe at the time of his visit. We would not be understood as hinting that Hurley will go out of iron ore mining in order to embark in competition with Havana as a tobacco center, yet the fact must stand that Havana tobacco seed has been grown and ripened at Hurley, Wisconsin.

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the plants of the raspberry, blackberry and strawberry in winter, and this precaution, which with modern methods is very cheaply given, the plant suffers far less from the rigors of winter than in many states to the south and east, where protection is not regarded as a necessity. The larger fruits, however, as the apple, pear, plum and cherry, of which the bearing trees must endure the weather of the whole year unprotected, are less successful, for the winters of northern Wisconsin are severe. But experience is showing that, with a wise selection of soil and site, the hardier varieties of the apple, plum and cherry may be grown with fair success in many districts of northern Wisconsin. Having shown that, with the exception of certain tree fruits, the crop flora of northern Wisconsin is the same as that of the other northern state, we are ready to consider the

### **MARKET POSSIBILITIES.**

It may be safely asserted that no other region in America offers better markets for horticultural produce than portions of northern Wisconsin. The reason that warrants so sweeping a statement may be briefly given. 1st. The chief attention of the few farmers in

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this region has thus far been devoted to hay, grain and stock raising, and the products of horticulture have been largely neglected. 2nd. Population in the Northwest is rapidly increasing, and cities are developing at many points. 3rd. Several of these cities, notably, Superior, Duluth, Ashland, Bayfield, Hurley, Ironwood, Marinette and Menominee, which already aggregate more than 100,00 inhabitants, are located in a region that is agriculturally undeveloped and are obliged to receive almost all of their horticultural supplies from far to the southward.

Indeed, the rise of the cities is in some respects unique, and will be difficult to understand until we consider the conditions by which they have been fostered. Reared by a commerce borne on the bosom of the great inland sea by whose waters they are planted, or by industries growing out of the rich mining and lumbering regions in their vicinity, they have developed almost without a thought of the latent agricultural resources of the surrounding country. Within sound of some of their church bell are to-day dense native forests that have been penetrated only by the hunter and lumberman, though the land bearing the forests would, if cleared, often be admirably suited to horticultural crops.

Under such conditions, the statement that the fruit and vegetable markets of northern Wisconsin have not as yet been fully supplied will find ready acceptance. And it is equally true that they are not likely to be supplied by home growers to the limits of their wants for many years to come, for we have but to take a brief retrospective view to gain an intelligent idea of the developments that are inevitable in the near future.

Looking backward half a century, we see Wisconsin little more than a wilderness. No railroad had yet penetrated its dense forests, and the largest settlement within its borders contained less than 10,000 inhabitants. To-day it has a population of nearly two millions, and more than 6,000 miles of railway, while its metropolis shelters 275,000 people. Yet its soil is not half under the plow, and the towns and cities that will one day dot its surface are only in their infancy. It would be very rash to assume that this development

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Five acres of cabbage grown by Martin Anderson near Grantsburg, Burnett County. View taken September 28, 1895. The whole field showed as good cabbage as that in the immediate foregoing. Northern Wisconsin will some day raise enormous quantities of vegetables for shipment to other markets where they will be highly appreciated and eagerly sought because of their fine flavor and general excellence.

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is not to continue during the coming half century. If it does continue, a vastly increased home market for horticultural produce will result. If eight thriving cities, bustling with the electric railway and other modern improvements, have sprung up on our northern boundaries entirely without the stimulus that comes from an extensive agricultural region, what have we to expect when the commerce of these cities is enhanced by the harvests of a million fertile acres in northern Wisconsin? But the market for produce grown in northern Wisconsin will not be limited to the confines of our own country, for an immense area lies to the northward that is destined to be inhabited by a thriving and prosperous people who shall supply a considerable part of the world their grain and livestock, but who must ever look to other lands for the greater part of their fruit supply. Already the custom house records show a very considerable movement of fruits from the northern Mississippi valley states into Manitoba and Assiniboia, and this movement is destined to increase to vast proportions.

Although the northern cities will undoubtedly furnish the best general market for horticultural produce, for special crops, as strawberries and blackberries, Chicago and Milwaukee may be found to equal them. Growers of these fruits in northern Wisconsin will have a peculiar advantage in the fact that competition from other localities will be very largely shut off, since these fruits mature considerably later in the northern and northeastern counties of Wisconsin than in other sections of the northwest. The strawberry harvest on the Door county peninsula continued the past season until the middle of July, and at this date the Chicago and Milwaukee markets can only be supplied from northern

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Wisconsin and northern Michigan. How far this southern market is capable of being developed remains to be demonstrated by experiment, but there are reasons for believing that, for the strawberry at least, it may become of much importance.

Messrs. Earl Brother, extensive commission merchants of Chicago, wrote under date of Nov. 18, 1895, "As to your question whether strawberries shipped to Chicago the middle of July would be marketable, will say yes. Strawberries sell at all times if the price is reasonable so it is within the reach of the major portion of the public." Messrs. Parker Brothers, also extensive Chicago commission merchants, wrote under the same date, "Our markets can use large quantities of such fruits (strawberries and blackberries) from the first to the middle of July, for at that time we are not receiving such fruits from other points."

From what has been said, it is clear that the time is long distant when the grower to choice fruits and vegetables in Northern Wisconsin will need to look far for a profitable market.

### **HORTICULTURAL HINTS FOR THE HOME-SEEKER.**

We shall offer a few suggestions intended to assist the home-seeker in choosing a location in which to pursue the different lines of horticulture in northern Wisconsin. It should be borne in mind, however, that our suggestions are to be regarded only as hints, and are not intended to supplant the individual judgment of the would-be settler. It is his duty to first appropriate all the available knowledge regarding the different locations under contemplation, and then to cast the final vote according to his own highest wisdom.

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No fruit is more highly appreciated by the housewife than that which comes from the old fashioned red currant bush. Our view shows a currant garden owned by Jas. S. Ritchie, Superior, Douglas county, taken September 7, 1895. The leaves had fallen early as they



always do on this bush. Mr. Ritchie has picked as high as seventy-five bushels of fruit from his little currant garden. The red currant will grow anywhere in northern Wisconsin.

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### **THE HOME GARDEN.**

From what has already been said, the reader may infer that, so far as the home garden is concerned, any land in northern Wisconsin that is suitable for farming will furnish a site where sufficient vegetables and small fruit for home use may be grown with ordinary care. If, in a few localities, tomatoes, melons and other tropical plants may not mature sufficiently early to make them profitable as market crops, they may, with a little extra pains, be caused to furnish an abundant home supply. The hot-bed and cold-frame will be found useful in forwarding crops that require a long season or that it is desired to mature especially early, but the cooler weather plants, as lettuce, cabbage, cauliflower, radishes, rutabagas, turnips, beets, parsnips, salsify, rhubarb, asparagus, onions and celery may be readily grown in the open ground by ordinary methods. The earlier varieties of grapes will mature in the average season if planted in light, well-drained soil on south slopes, unless it be very near the shore of Lake Superior, and there they will probably mature if trained to the south side of buildings. With the proper soil and exposure, which will be described later, the native plum and the hardier cherries will probably succeed anywhere in northern Wisconsin, and the Oldenburgh (Duchess) and other apples of the hardiest class may also generally be grown in sufficient quantities for home use.

### **LOCATIONS FOR COMMERCIAL HORTICULTURE.**

The importance of locating near a village or city, in order to insure a supply of cheap labor and fertilizers, will occur to the home-seeker who desires to follow horticulture as a vocation. Now that prices for realty have become normal, one would need to go back but a very few miles from any of the northern cities to find land that can be purchased at very low prices—a few dollars per acre. It will generally have to be cleared, however, but the

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timber in many cases will sell for enough to pay for the clearing and sometimes a part of the stumping also. In such cases, two or three years will be needed to prepare the land for cropping, but the settler can generally obtain work elsewhere for himself and team a part of the time to assist in supporting his family until he can realize something from his crops. Wood supply sells in the cities at a fair price, and by hauling a load of wood of market and a load of manure back, he can put in his labor profitably. Manure in these northern cities is generally regarded as a public nuisance, and may be had free of charge.

It is not necessary for the settler to locate very close to these cities in order to avail himself of their markets. Cleared land may often be purchased at very reasonable prices about the villages located along the railroads reaching out from these cities, and produce may be shipped in to the merchants of the cities where it will net nearly as much to the grower as if he delivered it with his own conveyance. It is probable also, in some cases, that manure can be shipped out by the carload at prices that would enable the gardener to procure it at a reasonable cost, though this has not often been attempted.

It is quite desirable to settle at a point that has an outlet in more than one direction, and by more than one commercial highway, in order that the shipper may take advantages of different markets and may not be obliged to depend on a single railroad.

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The Sturgeon Bay peninsula is destined to become the great orchard region of Wisconsin. Our view, taken August 19, 1895, on the farm of Joseph Zettel, three miles north of Sturgeon Bay, Door county, shows a Duchess of Oldenburg apple tree seven years planted. Apples, plums and cherries flourish in this section, the trees bearing early, with remarkable uniformity, and giving fruit of excellent quality. Green Bay-lying to the north west ward exerts a most favorable fall influence on this region.

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### **CHOICE OF SOIL AND SITE.**

The commercial horticulturist will generally be able to choose a soil suitable for his business without special advice. Fortunately there are comparatively few locations in northern Wisconsin where the soil is so heavy that it need be rejected for a market garden or fruit plantation, and as a rule the land will not require draining to make it warm and dry. It is important, however, that a location be selected that is reasonably free from untimely frosts, for although Wisconsin is certainly not more subject to frosts than other northern states, all partially cleared districts are more liable to these extremes than regions where the soil is chiefly under cultivation. A cleared area surrounded by forest furnishes a depression in which cold air tends to settle on clear, still nights, thus creating a danger to frost that will disappear when the surrounding forest is removed. This furnishes a key to the selection of a suitable site for the commercial horticulturist. He should choose a location that is more or less elevated above the surrounding country and if possible one that has at least a narrow strip of cleared land reaching to the lower ground to furnish a channel through which cold air may flow to the lower levels.

A site that admits of artificial watering in time of severe drought is always preferable to one that does not. Wisconsin, in common with all the western states, is sometimes visited by protracted drought, although a total failure of crops has never been experienced in the state. Certain horticultural plants, notably the strawberry during the fruiting season, are very susceptible to damage from a dearth of water, and the ability to supply water at a critical time may make the difference between success and failure. Northern Wisconsin is, for the most part, very well watered, but no survey has been made with reference to facility of irrigation, such an expedient having never been regarded as necessary. The commercial horticulturist will do well, however, in selecting his site, to bear the subject of irrigation in mind, and in choosing between two sites possessing equal advantages in other respects, he should select the one that offers more favorable opportunities for artificial watering.

### **OPPORTUNITIES FOR SPECIAL CROPS.**

Portions of northeastern Wisconsin are proving adapted to the culture of certain special horticultural crops. Peas are found to succeed admirably in a section bordering the lake shore from Manitowoc county northward, including the greater part of Door county and the whole of Wisconsin island. This crop not only grows and yields well, but what is more important, the seed is free from weevil that infests it in most other sections of the United States. The field pea is already extensively grown by farmers in this region and is proving profitable, as the seed usually sells for a good price, while the straw has value for feed, and the crop makes very small demands upon the soil. To a less extent, the culture of garden peas for seed has been undertaken and seems to be proving equally successful. It is probable that the growing of the garden peas may develop into considerable importance with those who are willing to exercise the proper amount of care in keeping their varieties pure and up to a high standard of excellence.

In a more limited area, including a part of Kewannee county, near the lake shore, lentils are being

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Lombard blue plum tree in the orchard of Aaron Moulton, Sawyer, Door county, August, 1895. This tree was four years set from the nursery and carried about one half bushel of the fine plums. Mr. Moulton has sold as many as thirty bushels of plums in a single season.

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considerably grown for market, and the crop is found to be free from both mildew and weevils.

The limits of the section in which pass and lentils may be successfully grown have not as yet been determined. It may be found to include the whole lake shore region of northern Wisconsin.

Canning factories for vegetables have been started at several points in central and eastern Wisconsin, which furnish a reliable market in their vicinity for large quantities of green peas, tomatoes and sweet corn. It is believed that the latter vegetable grown in localities of northern northeastern Wisconsin, where the summer heat is tempered by proximity to water, will be found equal in quality to that grown anywhere in the United States.

### **THE FRUIT DISTRICT OF NORTHERN WISCONSIN.**

We have elsewhere remarked that the severity of the winters in northern Wisconsin is a hindrance to the successful culture of the tree fruits. While this is true of northern Wisconsin taken as a whole, there is at least one district where it cannot be said to apply. Portions of the Door county peninsula lying between Green Bay and Lake Michigan are proving admirably adapted to the hardier apples, plums and cherries. The culture of fruit has not yet been attempted there on any large scale, but several small orchards have been in bearing some years, and the success that has followed these first efforts has been such as to render it highly probable that this region is destined to become one of the great fruit districts of the northwest. The experiments of Mr. Joseph Zettel, of Sturgeon Bay, show that many varieties of apples of which the trees have been found tender in other parts of the state may be successfully grown there, while the lateness of their maturity gives them superior keeping quality. Some of the finest varieties of the European plum have also been found to succeed admirably, while the plum curculio, the chief enemy to plum culture when present, is as yet unknown throughout all the northern portion of the peninsula. The sweet cherry, that is tender throughout most of the northwest, promises to succeed there, and the hardier pears may also probably be successfully grown. The market facilities in this portion of Wisconsin are excellent, as direct communication may be had either by water or rail with all cities of the northwest.

A glance at the map will help to explain the adaptability of the Door county peninsula to fruit culture. As will be seen, it is practically surrounded by water, which tends to soften the severities of the climate. The moist atmosphere is unfavorable to the apple and pear

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blight, so disastrous in regions further west. The waters of Green Bay are icebound in winter and remain so until rather late in the spring, which has the effect to lower the spring temperature of the peninsula and retard the starting of vegetation. When the ice finally disappears, warm weather comes on rapidly and does not meet with the set backs so common elsewhere, and that prove so destructive to fruits. As the waters have warmed up during summer the mild weather of autumn is correspondingly prolonged, giving ample time for the maturity of wood and fruit before severe freezing, while the minimum temperature during winter is several degrees higher than occurs on the mainland to the westward.

Land in this section of Wisconsin may be had at very reasonable prices, ranging from three dollars per

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The gardens of the Grant Bros. near Hudson, St. Croix county, occupy more than 200 acres. Their musk melons, cabbages, tomatoes and other vegetables find markets in St. Paul, Duluth, Chicago and even more distant points. Our view shows ten acres of onions planted for the seed. The onion seed grown by this firm has an excellent reputation. The soil of this section is of fair to high fertility, and that in the books and protected spots gives a very early harvest of vegetables of high quality. At the time of taking this view, July 16, 1895, these gardeners were shipping early cabbages from a six acre field of that one vegetables.

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acre upward, and cleared lands suitable for fruit culture may be purchased at twenty dollars per acre and upward.

Washington island, situated a few miles northeast of the Door county peninsula, is admirably adapted to the culture of plums of and cherries. The curculio is unknown there, and proper care it will probably be possible to prevent it from ever securing a foothold.

It is well here to remark that the location most favorable to the tree fruits is one that lies somewhat higher than the surrounding country and that slopes, if at all, to the north or northeast. For the plum and cherry, a light, rich loam with perfect drainage is preferable; for the apple, a rather strong admixture of clay over a limestone rock, or well impregnated with limestone drift, has been found to give the best results.

In addition to the Door country peninsula a considerable area west of green Bay is quite well adapted to the culture of hardy apples. The limits of this region cannot be positively defined, as the country is not as yet sufficiently settled. It begins in the valley of the Menomonie river, northeast of Marinette, thence passing westward, including the country west of Peshtigo and reaching south as far as Oconto, thence westward across Oconto, Langlade, Lincoln and Marathon counties, and as far as Medford, in Taylor county, and possibly rather. The uplands, through a considerable part of this region possess a soil favorable to the apple, and while the winters are undoubtedly severe, it is probable that apples of the hardiest class, as the Oldenburgh and Hibernial, may be successfully cultivated on a commercial scale. Farther south in the counties of Waupaca, Outagamie, Winnebago, Fond du Lac and Green Lake is an apple region that has already been considerably developed, and in which several large commercial orchards have recently been planted. These counties have been more fully settled than those farther northward.

### **THE WISCONSIN CRANBERRY REGION**

Until recently, one of the most extensive cranberry regions of the United States was located in parts of Wood, Jackson, Juneau and Monroe counties of west central Wisconsin. During the past two summers, however, this vast native cranberry marsh, which covered something more than 500 square miles, has suffered so seriously from fire that it is impossible to say to what extent it may prove valuable for cranberry growing in the future. It is certain that over the greater part of the former marsh region, the peculiar vegetable growth of which the cranberry vines formed a part has been effectually burned off, and how soon, if at all, it will again become established is a query for which human

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wisdom is probably inadequate. As there are strong evidence that the same region has been burned over, before, in pre-historic, it seems probable that its marshy character will be retained, in which case, it is likely to become one of the great cranberry producing regions of the world. If the cranberry vines do not promptly resume growth of themselves, there is little reason to doubt the they may be readily induced to grow by plating.

Cranberries are still produced to a considerable extent in the vicinity of Berlin, in Green Lake county, and in less degree near Waupaca. In these localities, the marshes have mostly escaped damage from fire, and will doubtless continue to prove profitable to their owners.

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There is no more difficult animal to photograph than the hog, yet our artist has captured a view of forty-nine of them just as they were about to be fed a part of the wagon load of corn. William Miller Rusk, Dunn county, is the fortunate owner of one of the beautiful farms of that rich section. He keeps about eighteen brood sows. This fall he has fattened 109 hogs for the market. The hogs shown in our view, taken October 12, 1895, were about 11 months old and weighed 260 pounds each. The skim from Mr. Miller's dairy should receive its share of credit for this excellent showing.

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### **Swine Breeding in Northern Wisconsin. JOHN A. CRAIG.**

The conditions prevailing in the northern counties of our state seem satisfactory for swine breeding. The factor of climate is of first importance, for on this depends that kind of foods that can be raised, the management that must be given the hogs and the degree of freedom disease. Of the foods that may be easily in the northern counties, the most important, from the standpoint of the swine feeder, are corn, peas, clover and rye. As the position of these crops in the husbandry of our state is discussed in other sections of



this report, it will not be necessary to give any attention to them further than indicate their adaptability as foods for fattening hogs.

### **THE PLACE OF THE PEA CROP IN SWINE HUSBANDRY.**

The pea crop is one of great value for hogs whether is fed off them or harvested and fed latter. It is both a common and a profitable practice to utilize peas for feeding hogs when in a green condition. It is an easy way of realizing on a valuable crop and the results seem to justify the practice. In drawing practical conclusions from the experiments of our experiment station, Prof. Henry states: "Where peas can be grown they are admirable protein food and should make a choice quality of pork. Peas can be sown broadcast in the early spring, and when ripening can be fed down by hogs, at no expense for gathering the crop." While there are no experiments showing the direct value of the pea crop fed a in this way, yet, the practice of many successfully hog feeders shows that it is a profitable method for fattening hogs.

The value of peas for fattening hogs can be shown from the results obtained at the Ontario experiment station. Hogs weighing nearly 200 lbs. each made 100 lbs. gain when fed 360 lbs. of peas. In another trial 120 lbs of peas and 237 lbs. of corn meal together made 100 lbs of gain with hogs, while 590 lbs. of corn meal, when fed alone, were required to produce 100 lbs. of gain. This shows that the mixture of corn meal and peas went much farther than did the corn meal alone.

The Maine station, experimenting with peas as food for hogs, concludes: "The nitrogenous vegetable foods, peas included, seem to exert a favorable influence upon the growth of swine similar to that of skim milk; moreover that vegetable of pea meal and of skim milk proved to have a nutritive value quite equivalent."

From the results it is clear that the pea crop is one of great value for fattening hogs and growing them. That this crop is especially adapted to the north has been abundantly proven, and there is no doubt but that this factor of itself will greatly contribute

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Oat field on the farm of Fred Ashbrenner, Siegler, Marathon county, taken July 10, 1895. These oats, which were nearly ripe at the time of our visit, promised a yield of about seventy-five bushels per acre. The comfortable farm buildings of this homestead show in the background. This part of Marathon county is very rich region, and is already well settled by a thrifty class of farmers. It will some day be known as a great dairy section.

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to the development of swine husbandry in our northern counties.

#### **THE IMPORTANCE OF OATS FOR FEEDING SWINE.**

Oats are very useful for feeding swine, provided they are used judiciously. Because of the hull which the oat grain carries, this feed cannot be used so generally as corn or peas, yet some can always be given to hogs with marked advantage. At our Wisconsin experiment station it was found that where the feed of the hogs consisted of 2-3 oats and 1-3 corn meal, 568 lbs. of the grain mixture made 100 lbs. of gain. Again, where only 1-3 of the ration consisted of oats and 2-3 of corn meal, 100 lbs. of gain was made with 492 lbs. of the mixture.

In summing up the results in these trials Prof. Henry states that the best results ever obtained in any trial at this station with hogs as old these, were secured when the ration consisted of 1-3 ground oats and 2-3 corn meal. He further intimates that for older hogs, especially brood sows, when maintenance and not rapid gain is desired, the experience of some of our most careful stockmen shows that oats can be fed unground with the best of results.

## **FATTENING HOGS AND DAIRYING.**

There is no question but that hog feeding is most profitable when it can be carried on in conjunction with dairying, and it is because of the limited development of dairying in the northern part of our state that hog feeding has not been given the attention it would otherwise receive. At the farm of Mr. William Miller, Rusk, Dunn county, I saw fat hogs fattened on corn and the by-products from a private dairy, and they were certainly as good a drove of hogs as many be found anywhere. They included 49 Poland China grades about one year old in November, and the buyer had averaged them at 260 pounds. Mr. Miller keeps about 18 broad sows, and makes a practice of preparing for market such a bunch of hogs each year. He had at the time 14 cows, which were mostly Shorthorn grades, and the milk from these he used in making butter in a private dairy, the skin milk going to the hogs. On October 12th, when his farm was visited he had 18 brood sows and 109 spring and summer pigs which he was fitting for market. He carries on his farm a flock of 60 sheep. While his operations do not illustrate any special line of farming yet, his farm typifies the best system of farming that can be carried on with profit in the northern counties.

Mr. O. works, Augusta, Eau Claire county, feeds a considerable number of hogs each year on the waste from his private dairy. He has pipes running directly to the pig pens from the dairy for the purpose of carrying the skim milk to the hogs. He uses a pure bred Poland China boar and keeps 15 to so grade sows. The pigs from these are fattened on the waste from the dairy and such farm grains as the farm produces.

Mr. J. B. Bartlett, Eagle Point, Chippewa county, also utilizes the waste from his private dairy for feeding hogs. He had 25 feeding at the time his farm was visited, October 10th, 1895. He keeps 8 brood sows and the produce from these is fed almost wholly on the waste milk from the dairy. He has found this a valuable adjunct to dairying for utilizing the

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skim milk, and has always been able to dispose of such hogs as he has fattened at a fair price.

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On many farms in northern Wisconsin there is a marked commingling of the old and the new; often frame buildings and those built of logs are found on the same. The former are recent and show the advancement natural to the country, while the log buildings are not torn down because they are in some degree still useful. Our view shows the farm home of August Krueger, one and one-half miles south of Merrill, Lincoln county, taken September 5, 185.

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### **Sheep Farming in Northern Wisconsin. JOHN A. CRAIG.**

The conditions that prevail throughout the northern counties are agreeable to sheep farming, and it seems that the future outgrowth will surely make these yet more favorable. In all essentials of sheep farming our northern counties very closely resemble the Canadian province of Ontario, which is universally considered to be the best developed mutton sheep region on our continent, and is known to be as healthy as any in the world.

### **INFLUENCE OF CLIMATE.**

The effect of a cold climate on the fleece seems to favor its density and the production of a fine fiber. One effect of a cold winter climate is to produce a dense coat of wool carrying considerable yolk; a more important feature is the influence of cold winter weather on the healthfulness of the sheep. Sheep in northern countries are less subject to contagious and parasitic disease than those in warmer regions. The effect of a cold climate is favorable to the thickness of the fleece and also to the production of grease or yolk in the wool, and both of these add materially to its weight. Nearly all contagious and parasitic diseases depend for their continued on dampness or warmth of the climatic conditions.

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An illustration of the favorable effects of Wisconsin's climate on sheep is shown in the flock of J. A. Wolf, Minong, Washburn county, 47 miles south of Superior, as found on a personal examination. The original ewes in this flock were brought from one of the western states, and the first gave a clip of only 3 lbs; the succeeding year the wool averaged 7 lbs., and the third year 8 lbs per sheep. While this increase is largely attributable to the use of heavier fleeced rams, yet, it clearly indicates that the climatic conditions are agreeable for the production of heavy fleeces of wool. That the conditions were also favorable for a growth of a good fleece is also indicated by the score of some northern fleeces at the World's Columbian Exposition, Chicago, 1893. From the Neillsville Stock Farm, Neillsville, Hampshire Down Fleece were sent to the fair in competition with others, and among these was home bred ewe scored as follows:

15.5 out of possible 16 for density.

19.5 out of possible 20 for evenness and fullness of covering.

15.5 out of possible 18 for brightness and softness.

14.8 out of possible 16 for character and fineness.

12.8 out of possible 14 for strength and elasticity.

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One purpose of this Hand Book is to interest our people in the advantage of Northern Wisconsin for the production of fine mutton. Here we have two views of mutton sheep, which will long hold the attention of lovers of animal life for their beauty. The lower views shows the flock of pure Shropshire Down ewes on the farm of Albert Smith, nine miles from Eau Claire, Eau Claire county. The upper view shows a group of Cotswold ram lambs, some pure bred, some grades, on the farm of D. H. Williams five miles from

Neillsville, Clark county. The little flocks of fine mutton sheep now in northern Wisconsin are a prophecy of the great industry some day to prevail there.

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17.1 out of possible 20 for evenness of quality of wool over all.

This is a score of 92.2 out of a possible 100. The age of the fleece was 293 days; weight 13 lbs., 3 1-2 ounces; length of the staple, calculated for 365 days' growth, was considered to be 6.1 inches by the judge, Charles F. Avery. The flock of grade sheep at our Experiment Station, Madison, have scored at the World's Fair as high as 94.9 out of possible 100. These grades are descended from our common stock, and have been subjected for years to influences very similar to those prevailing in the northern portions of our state. Bearing on the healthiness of sheep in the north, I may say that although about twenty flocks have been inspected not a single one showed any evidence of being troubled with any infectious or contagious disease. Troubles such as colds and the attacks of the lung worm seem to be the only diseases that are prevalent.

### **WATER PRIVILEGES.**

It has been considered that sheep do not need water, but that belief has been completely supplanted by the more intelligent one asserting that they are at all times greatly benefited by access to it. From other parts of this report it is evident that living water is common throughout the northern portion of the state.

### **FOOD ADVANTAGES.**

In other sections of this report the different crops which succeed in the northern counties are fully discussed, therefore it will only be necessary here to refer to the adaptability of the crops that may be grown there for feeding sheep. Clover, peas, oats and roots yield exceptionally well and these are excellent foods for sheep. The climate of the northern counties seems to have the same adaptability for the pea crop as that of Canada, and

further there is likely no fodder, with the exception of clover hay, that sheep relish greater than pea straw. For fattening sheep a mixture of peas and corn can hardly be surpassed. In a trial at our station we obtained the most profitable results from feeding an equal mixture of peas and corn in a ration for fattening lambs in comparison with corn alone, corn and oats or a ration of corn, peas and oats.

When oats are cut early and made into hay they are excellent fodder for sheep, and the grain is valuable for feeding breeding stock such as rams, ewes and lambs. This is one of the staple crops of the north and rarely fails to be above the average in quality. Where clover can be grown for pasture and for hay there is no need of considering the advantages of any other kind of pasturage for sheep. This is undoubtedly the best fodder that may be fed to breeding ewes or to fattening stock during the winter season, and the fields of aftermath can hardly be surpassed for pasturing lambs subsequent to the time of weaning.

Roots are almost a necessity for feeding sheep or fattening stock. They are especially valuable for feeding breeding ewes after they have lambed at a time when it is too early to turn them out to pasture. Liberal feeding of roots then seems to stimulate the milk flow. For fattening sheep some succulent food, such as roots, is required to keep them in a thrifty and healthy condition. In view of these facts, it is very important to know that the climatic conditions of the northern portion of our state are especially favorable for a growth of the root crop. It is likely that the root crop will occupy the same position in northern

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In this triple view the reader is shown some of the objects of interest on the stock farm of Andrew Tainter, three miles east of Menomonie, Dunn county. The lower view shows a group of pure bred Red Polled cows. Above this as the middle figure, is a paddock of brood mares and their colts sired by Legal Test, Birchwood, and Col. Strader. The upper figure presents a group of pure bred Shropshire ewes. It is most fortunate for northern Wisconsin that some of her pioneers are possessed of a strong love for improved stock.

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The introduction of such blood in the beginning of improvements is conducive of untold good.

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farming that it occupies in Canada, where a large acreage is grown every year for fattening sheep and cattle.

Corn must necessarily be considered among the crops adapted for sheep feeding. It is likely that there is no single grain that will fatten a lamb so quickly and so cheaply as corn, while the fodder is excellent for feeding as the coarse portion of the ration. In feeding sheep experimentally at the station we have had most profitable results from corn as a fattening ration in comparison with other single and it is certainly interesting to know this crop is one that can be relied upon in the north.

Rape is generally known as a crop especially adapted for sheep farming, as the sheep are very fond of it and good gains are made folding them on it. It makes excellent pasture for them during the summer season as it furnishes during that time a large amount of succulent food which they greatly relish. It is a crop of importance in enabling a breeding flock to be maintained cheaply. It is most profitably utilized, however, when used for[ feeding fattening lambs from the time they are weaned until put into the sheds for further fattening. It may be so fed as to entail very little labor, and when the lambs are given a small amount of grain and some pasture with it very profitable results are obtained. At the Neillsville Stock Farm Neillsville, Clark county, and on the neighboring farm of G. A Austin, this crop has been tried with signal success. Mr. F. E. Brameld, the manager of the Neillsville Stock, stated that he broke up 2 1-2 acres of old sod the first week in June and sowed the rape at the rate of four pounds per acre. On the first of August, fifty ewes and lambs were turned on this field and at the end of two weeks the lambs were weaned and the ewes remained on the rape. They were fed in this way until the end of September, when the land was plowed and made ready for rye. At the time of my visit the ewes about finished eating the piece of rape on Mr. Austin's farm; that which remained indicated a very



strong growth, and the condition of the sheep showed that they had received more than ordinary nourishment from the crop. It is certain that this crop will play an important part in the farming of the northern parts of our state, because it is peculiarly adapted for the climate conditions which prevail there, and it is further known to be a food especially liked by sheep and swine.

### **ABOUT WINTERING SHEEP.**

It is often asserted against the northern counties that the expense of winter feeding is too great to make fattening stock profitable. This statement is usually accepted without being challenged, but consideration of it will show that it has not the force usually applied to it. One acre of pasture will carry three sheep over a summer's season, under average conditions; if allowed to produce hay a similar acre would likely return 2 1-2 tons of hay which is sufficiently for at least ten sheep during the winter season. On the basis of acreage, more sheep may be carried through winter conditions than can be during summer conditions, so that the winter is not necessarily unprofitable in sheep feeding.

### **LANDS AVAILABLE FOR SHEEP FARMING.**

Throughout the northern counties there is much land that is adapted for sheep farming. They may be

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Our lower view shows a group of pure bred shire and Cleveland bay mares with colts, on the Neillsville Stock Farm, Clark county. Above is a flock of pure bred Hampshire Down ewes on the same farm, which are feeding off a field of rape. Sheep raisers in Wisconsin should early learn the great value of rape for feeding and fattening sheep. Those settling at the north cannot be too particular about getting the best blood in their flocks and herds.

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classed as (1) waste tracts low in fertility, (2) grazing lands that are rough and rocky, but possessing a fairly rich soil, and (3) those lands which in time will be adapted to general farming.

The waste lands are light, sandy soils found in districts where the pine has been removed and but a meager growth of vegetation has taken its place. In most instances there is some such herbage as bunch grass, which could not be depended upon to supply permanent pasture. From the experience of older countries, it seems safe to assume that such lands may be brought into fertile conditions by having sheep herded on them. Tracts of this character existing in some parts of Washburn county illustrate the general character of this soil. These lands may be purchased for about seventy-five cents per acre in large tracts, and it would seem that the cheapness of them afforded sufficient inducement for a trial on sheep farming on them. In most parts lakes are numerous and the water privileges good. The pasture at present is light, as the soil seemingly cannot support a dense growth. Material for shelter is furnished by the scattered growth of pine which extends over these tracts. The market facilities and the shade and abundant water of such regions adapt them to profitable sheep farming, excelling regions further west, even though the soil at present is less fertile.

The grazing lands of the northern counties which have been spoken of as rough and rocky, but possessed of a strong soil, exist in large tracts running through the northern portion of Barron county and elsewhere. The single feature that operates against their cultivation is the abundance of "hard-heads," varying in size from small stones to large boulders. The soil is strong enough to make the best basis for pasturage. In the neighborhood of Rice Lake, Barron county, are some large tracts of this land which are more or less typical of what we have called grazing lands. They are traversed by numberless small trout streams and they border on several lakes. Such lands are easy to seed to pasture and a strong growth results. On the level plateaus which are freer from stones, the land is rich and would certainly produce a luxuriant growth of crops common

to this region. Such lands may be bought from one to three dollars per acre, and at such a price it would seem that they can be utilized to good advantage for rearing lambs to be fed on foods produced on farms more arable.

Lands adapted to general farming are, in most sections, well wooded and as a consequence they are not yet available for sheep farming, until they have been partially cleared. There are some section that have been cleared in places by the fire and the lumbermen, so that it will be a easy matter for sheep to obtain a living on them, and at the same time assist in making the clearing permanent. Where the trees have been chopped down and everything removed but the stumps, it is not a hard matter to get a good catch of grass and it is in such instances that sheep show the most adaptability for helping the pioneer farmer.

#### **POSSIBLE DAMAGE FROM WOLVES.**

Among the drawbacks to sheep farming in northern Wisconsin there is only one that has a serious aspect, and it only presents itself in a few neighborhoods. There are only a few instances of wolves being troublesome and doing any damage to flocks, and it is certain that it will only require a few years to largely remove this annoyance. Even when wolves are troublesome

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In the lower portion of our view is shown the dairy herd of Geo. Martin, Hudson, St. Croix county. The cream from this herd of cows is shipped to Duluth, Minn. This view, like others showing cows, plainly tells that they thrive in northern Wisconsin when well handled. Our upper view shows the flocks of pure bred Shropshire ewes on the farm of J. E. Glover, nine miles from Hudson, St. Croix county.

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they are much to be preferred to the many dogs that have accomplished much more damage in older settled districts.

## **PURE BRED SHEEP.**

The small pure bred flocks in the northern part of our state were mostly founded at a time when there was much interest and profit in breeding pure bred sheep, though at present the supply has over-reached the demand. There is no doubt but that there will yet be a demand for the pure sheep of the leading mutton breeds, but the fact has been overlooked that the strength of the demand depends on the number of farmers and stockmen in need of pure-bred rams to put at the head of grade flocks, so as to produce fat sheep for market. There has not been a corresponding growth in the industry of fattening sheep for market, and, in consequence, these small flocks of pure bred sheep, though they were established at considerable expense, are not making the profit for their owners that was expected from them. When the northern counties do the work they should do, in supplying the Chicago and other markets with fat lambs, there will be a permanent demand for pure bred stock, and there is no doubt but that pure bred sheep may be reared successfully under our northern conditions. Several flocks of Cotswolds and Downs were inspected, and they all seemed to be doing well.

## **MARKET FOR FAT LAMBS.**

At present there is quite a number of flocks of sheep throughout the northern part of our state, but owing to the fact that the country is new, their product cannot be marketed to the best advantage. It seems that most of the grade flocks are at present maintained for their work as scavengers. There is some waste land or land not completely cleared on almost each farm, and the grazing of this is considered to be the duty of the flock. A few lambs are fattened, but as the number each farmer has is small, it is a difficult matter to get them to market so as to receive the best prices for them. The usual price throughout the northern counties may be said to be about three cents per pound for fall lambs that have had no grain with their pasture. This admits of some profit to the grower when the cheapness with which they are raised and the small amount of trouble they have given is considered. When a flock is large enough to furnish a few carloads of good lambs for

the Chicago market, returns from it will be much better. This market is the usual mart for western lambs so that it will be of interest to know the average prices that have prevailed during several years, at such times as the northern farmer may have lambs to sell. The following extracted from Bulletin 32 of the Colorado Experiment Station

Average Price of Lambs in the Chicago Market, November to May inclusive, for Years.

General 1891 1802 1893 1894 Average. Nov. 1 to 15 5.20 5.76 4.68 4.28 4.97 Nov. 16 to 90 5.31 5.55 4.78 3.75 4.85 Dec. 1 to 15 5.25 5.90 4.67 4.15 4.99 Dec. 16 to 31 5.88 6.29 4.75 4.03 5.24 Jan. 1 to 15 6.00 6.12 4.87 4.26 5.31 Jan. 16 to 31 6.27 6.09 4.77 4.56 5.42 Feb. 1 to 15 6.42 6.20 4.61 5.05 5.57 Feb. 16 to 28 6.51 6.21 4.35 5.32 5.61 March 1 to 16 6.77 6.44 4.19 5.48 5.81 March 16 to 31 6.85 6.27 4.50 5.82 5.86 April 1 to 15 6.65 6.57 5.49 5.89 6.15 April 16 to 30 5.96 9.78 5.40 5.55 6.17 May 1 to 15 6.85 7.21 6.25 5.72 6.51 May 16 to 31 7.48 7.26 5.84 5.99 6.64 Average 6.31 6.33 4.94 4.99 5.65 123

At the present time there are only two or three score farmers in all Florence county, which possesses much fine land for agricultural purposes and a great wealth of hardwood forests yet untouched by the ax. We show the homestead of C. C. Washburn, located about twelve miles southwest of Florence, taken August 2, 1895. We note the thrifty appearance of the cabbages, peas and oats, the latter reaching to the shoulder of Mr. Washburn. The hard wood forest stands like a wall about this pioneer's clearing. Mr. Washburn tried farming in the prairie region further west without success and settling in the woods of Wisconsin he has made a comfortable living by hard work on farm and in forest, and his children are receiving a first-class education.

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gives the average prices of lambs in Chicago market from November to May, during a period of four consecutive years.

## REARING LAMBS FOR OTHERS TO FATTEN.

In considering all the conditions that prevail in the northern counties it seems that the rearing of lambs to be fed elsewhere will prove an industry especially adapted for a large

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portion of this section. The conditions of climate and soil and other features necessarily attached to a new country seem to have unusual adaptability for rearing feeders for stockmen in the counties in the more southern portions of our state to fatten. When lambs may be reared on pasture and sold for three cents per pound they certainly offer a fair margin to the breeder, and when they can be bought for three cents per pound and sold for the prices which have been prevalent in Chicago during the last few years, there is also margin left for the feeder. Sheep farming in our northern counties, if it is to make the most of the condition that exist there, must develop some system whereby the stock so raised is brought before the feeder for the fat market. There are certainly unlimited possibilities in this line of development. In England and in Scotland this system has developed into a business of vast connections. There are marts in Scotland and in England where lambs from the hills and rougher lands of the northern country come under the inspection of the feeder from the more southern countries. This system of making a market for lambs has done more than any other single feature to place the sheep husbandry of those countries in the position which they occupy today. To show the extent to which this trade has grown in Scotland the sales for the year 1895, reported in the *North British Agriculturist*, have been tabulated to show the number of lambs that change from the breeders' to the feeders' hands during the months of August, September and October. During the month of August at the marts of Perth, Lanark, Hawick, Inverness, Bostwells, Kelso, Castle Douglas, Carlisle and Lockerbie, 314,051 sheep were sold, mostly to go south for further feeding. In September, in the same marts, excepting Inverness, the total sold was 132,631, and during October at seven of those marts 151,451 head, consisting mostly of lambs, were disposed of by auction. At a single sale in Perth as many as 90,000 bill sheep have been sold. This system of selling lambs has proven to be of great advantage to the southern countries where they are fed, while it affords an unlimited market for the product of the northern counties. From the conditions which exist in our northern countries, it would seem that if our sheep husbandry is to develop to any considerable degree it will be along this line. Throughout the northern countries there are numerous small flocks in which only a few lambs are raised each year; by gathering these small flocks together at

some central point of the neighborhood and shipping them to a central market where the feeder may inspect them, much better prices could be obtained for them. If such a means of communication between the breeder and the feeder is established, no limit can be set to the development of the sheep husbandry in the northern countries.

### **PROFIT IN FEEDING LAMBS UNDER NORTHERN CONDITIONS.**

The discussion which has been given to the conditions existing in the northern counties, with the presentation

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Fifteen years ago Mr. Michael Baltus located in the woods two miles east of Auburndale Station, Wood county, purchasing eighty acres of land. Our views shows the plain, but comfortable log cabin long occupied. In the rear of this, Mr. Baltus has erected a frame house during the past season, which was not completed at the time of our visit. This house has been paid for out of money made on the farm. The pioneer with little means will do well to imitate this settler in being satisfied with a comfortable cabin of logs at first, leaving the frame house to follow when it has been earned. In the foreground appear the vegetables grown in Mr. Baltus' flue garden.

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of the prices which are paid in Chicago, will allow us to indicate here the profit that may be made from fattening lambs under northern circumstances. Among the foods that may be grown in the north for sheep feeding we will consider that corn fodder and hay are both available for feeding as the coarser portion of the ration. As oats, peas and corn all make satisfactory growth in the northern sections, we will assume that these are available for feeding lambs for fattening purposes. To present the matter in the most unfavorable light we will place the value of corn fodder at four dollars per ton, hay at eight dollars per ton, oats at thirty cents, peas sixty cents, and corn at forty cents per bushel. If we value the lambs at three cents per pound, when the fattening starts, and credit them with the value of four cents per pound when they are ready for market, and charge them with the foods

that they eat at the prices quoted, it is evident that we would be placing the lambs in the most unfavorable position in which it would be possible to put them, for the purpose of making a profit in feeding them. By referring to the statement which is given of the prices of lambs in Chicago market, it will be seen that they at no time were as cheap as four cents, and in placing them at this price when fattened, more than due allowance is made for the cost of shipping them to and selling them on Chicago market.

#### **WHAT THE EXPERIMENT STATION WORK SHOWS IN LAMB FEEDING.**

The Michigan Experiment Station fed lambs averaging 82 lbs. fifteen weeks on corn and hay, with a gain of 33 lbs. per head for the period. Each lamb ate on an average 158 lbs. of corn and 110 lbs. of hay. Charging for these lambs 3c. per lb. live weight at the beginning of the experiment, and also charging for the food eaten at the prices before mentioned, and crediting these lambs with the value of 4c. per lb. when fattened, there was a profit after paying for feed of 54c. per head, a very satisfactory sum, considering the high prices at which the foods in their rations have been charged.

At the Wisconsin Station, we fed lambs averaging 86 lbs. on corn and hay, and secured a gain of 21 lbs. in eight weeks, with a profit, after paying for feed as above of 87c. per head. Peas and corn gave a profit of 80c. per head. At the Michigan Station oats and corn gave a profit of 54c. per head.

Considering the fact that these foods have all been charged to the lambs at prices greatly above those current in the markets at the time, and that the value of the lambs when fattened has been placed at prices lower than usual, it would seem that with the foods available in the northern counties there are excellent opportunities for making a profit from fattening lambs during the winter months.

It is evident that there are two lines of development open to the sheep interests at the north which are certain to yield substantial profits. The one relating to the rearing of feeding sheep for the southern counties seems the easiest course to pursue, but it is



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certain that the most profit is to be found in fully preparing the fat lambs for the market, and this in time will undoubtedly be the leading interest of northern sheep husbandry.

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Views in and about Marinette, Marinette county. Our composite picture shows: (1) the Menominee River Boom Co.'s men running logs into separate "pockets" for delivery to mills. In 1895, over 3,600,000 logs containing about 375,000,000 feet of lumber were thus handled at this point. (2) Log jam in Menominee river just above city, extending five miles up stream; (3) Part of Marinette & Menomonee Paper Co.'s plant, being one of three mills with daily capacity of sixty tons of paper; (4) high school building in Marinette.

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### **The Dairy Industry for Northern Wisconsin. W. A. HENRY.**

The settler coming to the newer portions of northern Wisconsin will find, as others have found in the past, that it is very profitable to sell hay, grain and other farm produce to the lumber camps and milling centers so long as the supply does not exceed the demand. For all farm produce needed at these centers of consumption, the prices paid the farmer are nearly or quite equal to the price of the products in Chicago or other supply centers, plus freight to the point of consumption.

In places at the north where the country is considerably cleared up and many farms already established, and at other points where the lumber industry has moved on to new sections, the farmers are already finding a lessened demand for hay and grain by local consumers and the question of proper markets for their produce is becoming an important one. This difficulty will become more general over the north, year by year, as the country settles up, though there are still large regions where the home demand for farm produce will exceed the supply for many years to come.

Because of the excellent shipping facilities, the Wisconsin farmer located in the northern part of the state is as well off as those elsewhere, when it comes to selling his produce in

distant markets, but if we may judge from experience obtained in other section they cannot afford to become producers of hay and grain which must find markets a long distance from home. If we examine the condition of the farmers of our country we find that those who produce grain for a livelihood are not succeeding, as is shown by the unthrifty farms of the grain growers and the numerous heavy mortgages which are sapping the life blood of this class of people. Lack of space prevents any lengthy explanation, but our northern farmers should know that those sections of Wisconsin which are producing the most grain for market are the least prosperous, while on the other hand those which are producing grain but feeding it all to live stock are the most prosperous and progressive. Let the farmers of northern Wisconsin then, from the very start, avoid the great error of trying to get a living from growing grain to be sold at the railway stations, and at once provide for the disposal of all the field crops on their farms by feeding to good, well improved farm stock. By this means they will avoid the heavy freight charge on hay and grain, and will only have to meet the relatively small one which must be paid when shipping mutton, wool, pork, butter, cheese or eggs. A car load of grain may be worth \$200 and the freight on the same \$100, or half the value of the material sold. A car load of butter or cheese is worth several thousand dollars, and the freight on this is but little more than that on the car load of grain.

There is another reason for animal husbandry. By feeding the hay and grain raised on the farm and selling only animal products, like butter, cheese, mutton, etc., a large part of all the fertility removed from the

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A cream wagon gathering cream for the Cecil, Shawano county, creamery, July 9, 1895. The gathered cream factory is the pioneer method of co-operative dairying. Cream wagons take different routes from the factory, make long journeys and return at night loaded with cream gathered at the various farm houses. Thus the labor of butter making is taken off the farm and a better product came. At a later stage in development comes the cheese factory

or the separator creamery. At the time of our visit the Cecil creamery was making 700 pounds of butter daily.

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soil by the crops is saved in the droppings of the farm animals, and can be returned to the fields again, thus keeping them fertile instead of impoverishing them as always occurs where grain, hay, straw, etc., are sold in the markets. A third reason for animal husbandry is that there is money coming in at short intervals throughout the year. The dairy farmer receives monthly payments for his milk, and is thus ready to meet all obligations at the store, instead of incurring debt while waiting for his crop to mature. Still another advantage is that there is steady employment throughout the year, and something is earned each day, which is not true with grain growing.

After careful study of all the conditions prevailing in northern Wisconsin, the writer of this article is firmly impressed with the belief that this will some day become one of the great dairy regions of America, if only the people will blend their energies in the right direction and concentrate their efforts upon the production of high grade dairy products. Let us look carefully into the requisites of a true country, and see if northern Wisconsin meets the demand.

First of all there is that prime requisite for fine butter and cheese, namely, an ample supply of pure, cold water, everywhere accessible. Northern Wisconsin is unexcelled by any region in the great abundance of pure cold water in her thousands of lakes, her many rivers, brooks and springs; indeed, the water supply will meet the requirements of the most exacting in its quantity, prevalence, purity and coolness.

The second requisite is an abundance of wholesome stock foods, in good variety for summer and winter feeding. In summer time the dairy cattle of northern Wisconsin will find in its pastures the finest of grasses and clovers, for the cropping. Red and white clover flourish, and timothy and blue-grass pastures are as prevalent and productive

as anywhere further south. The pasture season for cattle is not so long in the far north by about one month as in the extreme southern part of the state, but while they last, these pastures are not excelled by those in any other part of our country, as well have ascertained by careful, close study of the turf of this region. For winter forage the dairyman can provide an abundance of fodder corn, clover and timothy hay, pea straw, oat hay, root crops and silage from corn and clover. This gives him a list of coarse forage equal in variety and quality to that possessed by dairymen farther south in the state, and the abundance of these crops is only measured by the ambition of the farmer in producing them.

But dairy cows must have grain as well as coarse forage; here the northern farmer suffers nothing in comparison with dairy elsewhere. Over much of the north Indian corn will ripen, giving that feed in abundance. Then there are oats, which give a sure crop of fine grain, and barley yields an abundance of grain excellent for cow feeding. The yield of peas at the north is far excess of what can be gathered from this crop farther south, and pea meal furnishes a cow feed of the strongest character. The numerous railroads crossing northern Wisconsin lead to the milling centers of Minneapolis and Superior, making it an easy possibility for dairy farmers to secure bran and shorts to supplement the grains grown on the farm.

### **THE WINTER KEEP OF COWS NOT UNDULY EXPENSIVE.**

The northern dairyman must feed longer in the

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That cattle thrive and the dairy interests prosper in northern Wisconsin is evidenced by our view which presents the fine barn and splendid herd of dairy Shorthorns owed by Chas. Scott, whose farm is six miles from Augusta, Eau Claire county. Our artist has caught this herd at an instant when by the pose and grouping every lineament of each individual tells

of thrift, good care and natural adaption to environment. Dairy cattle are easily managed and very profitable in northern Wisconsin under wise handling.

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stable and less on pasture than his southern competitor. To the novice this may appear a serious disadvantage; to the experienced dairyman it is nothing of the kind. Those dairymen who have had large experience in the matter of managing dairy cows find that winter feeding is as economical as summer pasturing, all factors in the matter being taken into consideration. If pasturing is so much cheaper than winter feeding, our dairy districts would, from the force of competition, be located in the milder tempered regions of the world; instead of this we find the great dairy districts located not where the cattle can roam the fields the year round but rather where, during a considerable portion of the year, the ground is covered with snow and the growth of vegetation stopped by cold more or less severe. The best dairy regions are found in the extreme northern portions of the United States, in Canada, Denmark, Norway and Sweden, Finland and the mountains of Switzerland, all districts where the summers are comparatively short and the periods of winter feeding quite long. Let the farmers of northern Wisconsin immediately and forever dismiss the bugbear of long winter feeding being disastrous or a permanent drawback to successful dairying.

The final question of markets for products remains to be considered. With good manufacturing towns located all over northern the part of our state, and great mining and shipping cities found on the lake borders and with trunk line railways crossing the region in every direction, the dairyman of northern Wisconsin has nothing to fear concerning markets. Let him make the fine dairy goods his opportunity makes easily possible, in sufficient to invite buyers, and no trouble will come in finding markets at good prices for all he may produce.

After carefully examining the whole problem on the ground itself, studying the few dairy cattle found at the north, noting the possibilities of the pastures and the abundance of

winter feed guaranteed by the. Fertile fields and good summer climate, the abundance of the water and the purity of the atmosphere, the writer believes there is no serious hindrance to northern Wisconsin developing into a dairy country of the first magnitude.

### **NORTHERN WISCONSIN A GREAT CHEESE DISTRICT.**

The writer makes the prediction that some day northern Wisconsin will rank as the foremost cheese district in America, if not the world. No one who has carefully studied the subject and observed what has taken place in other countries, and what is occurring in a small way at present in our new north, will seriously deny this assertion. The fine cheese districts of Europe and America are not in the warm regions, but rather in those where the nights are cool, the waters pure and cold and the grasses possess a high nutritious value. Such regions as these are found in the mountains of Switzerland and the cheese districts of Canada and northern New York and our lakeshore counties like Sheboygan, Manitowoc, also Fond du Lac, Outagamie, etc. While southern Minnesota, southern Wisconsin, northern Illinois and Iowa will remain the great centers of butter production for this country, these districts cannot hope to compete with northern Wisconsin in the quality of the cheese which may be produced there, for the reason that in

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Northern Wisconsin will some day have wide reputation for the marked excellence of its dairy products. Our views, taken September 23, 1895, shows the beautiful dairy herd of full-blood Jerseys owned by W. H. Bradley, Jersey City, Lincoln county. Located as this fine is away up in northern Wisconsin, it is destined that the blood of these animals will filter into hundreds and thousands of herds of cattle scattered all about the region and so accomplish a vast amount of good. Our pioneers will be wise if, instead of using scrub animals and being content with mediocrity, they cut out a score of years of profitless plodding by adopting, in the very beginning, the rigid rule that in breeding dairy stock they will use only the best sires.

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this great butter region the summer days are hot and the waters which the cows must drink becomes quite warm; these conditions shut this region out forever from entering into serious competition with our new north in the manufacture of cheese of the highest grade. It is not asserted at this point that good cheese cannot be made in southern Wisconsin and even in Illinois; it is affirmed with emphasis that northern Wisconsin can and will some day produce enormous amounts of cheese, which for quality cannot be equalled by that made further south. The most nutritious of grasses, the coolest of waters and the temperate sun of summer are all necessary for the production of milk which shall go to make cheese carrying the purest flavors, and northern Wisconsin has all of these in a marked degree. This adaptation to the production of fine cheese is a heritage to this region from which it can never be parted. It is as valuable to our new north as are the gold mines to Colorado or the coal beds Pennsylvania, and when northern Wisconsin shall have been occupied by an intelligent people and its cheese industry properly developed there will millions of dollars flow into this section each year from the sales of this one line of dairy products.

### **WHAT OTHERS THINK.**

That others who understand the requisites for prime cheese manufacture believe in this can be ascertained by any one upon a little investigation. Here are two reports coming as the results of inquiries in this line. N. Simon & Co., Neenah, Wis., operating about 25 cheese factories about Neenah and producing fine goods, the reputation of which is established at many points in this country and also in Great Britain, in reply to our inquiry on this matter, write:

"Our idea from the experience we have had this season is that the northwestern portion of Wisconsin is as good a country as can be found for cheese making. \*\* Several years ago the writer, N. Simon, spent two or three weeks about Marshfield looking up the cheese business. At that time did not consider it worth much of anything as the cows were running through the timber and browsing, and the milk had a very bad flavor, but since then the country has cleared up considerably and they are getting as fine flavored milk as can be

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produced, especially where they have tame pastures. We really believe this is a good country for cheese making.”

Parliament & Espert, Chicago, Ill., are large dealers and exporters of cheese. Perhaps no one in this country understands the situation better than this firm. Here is from their letter:

“Chicago, Ill., Dec. 7, 1895.

“You asked our opinion as to the use of the lands in northern Wisconsin. In reply will say we think they are very well adapted to dairying. It is our opinion that a fine grade of cheese could be made up there. Even now the further north we go for our cheese the finer quality we get. It is our opinion that it is a wise move to develop that part of the country more extensively with the dairy industry.”

These opinions of our leading experts and dealers should not be passed over lightly by the farmers of northern Wisconsin or those considering the agricultural opportunities of that section; reports of this kind present evidence which has been accumulating for a long time, and are an index of possibilities which

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Mr. A. B. Whittier, Deronda, Polk county, possesses a herd of valuable pure bred and grade Guernsey cows. Our view, taken October 16, 1895, shows his home with the cows on the left on the picture. Butter from this herd is shipped to various points along the “Soo” line, where it sells without difficulty at from twenty to twenty five cents per pound.

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should be serious consideration by all interested. Northern Wisconsin cannot produce wheat or grain generally which can be sold a profit. From the nature of the country, this region must remain a land of small farms and here can be produced cheese which will stand unexcelled by any other country.



## **DRAWBACKS IN DAIRYING.**

We have already referred to the alleged difficulty of dairying due to the shortness of the pasture season, and shown that this objection is really not a serious one. The winter of northern Wisconsin are long and cold, but they can be overcome or made to work no serious harm if the dairyman will only make use of the natural opportunities about him. Every dairy man must see that cattle are housed in warm stables, which are well lighted and thoroughly ventilated, and the pioneer of limited means need not allow his cows to suffer any more than those of his well-to-do competitors. At the north logs can be cut in the woods, which cost him nothing, and from these, convenient and very comfortable stables can be built at an insignificant cost aside from labor. When visiting the Danish farmers in Polk country the writer found the cows housed in mid-winter in log stables that were more comfortable as a rule than expensive and often pretentious barns in southern Wisconsin or northern Illinois. Farmers further advanced will of course construct their stables of lumber, but in doing so should take great care that they be made warm and entirely comfortable. Our stable are commonly made with their walls so full of cracks and crevices that often the dairy cows housed within such stables suffer more than if allowed to those the leeward of straw stacks. Lumber is cheap in northern Wisconsin and the cow stables there should be double boarded with building paper between the two thicknesses of boards so as to keep out all draughts. Another plan is to board on both the inside and outside of the frame work, filling the interspace with chaffed straw.

It is a well known fact that people living in the northern part of the United States usually suffer less inconvenience and pain from cold than those living at the south, because the northern people expect cold weather and are prepared for it, while at the south the houses and clothing are arranged for warm weather conditions and not for the cold waves which occasionally come and bring intense suffering. It is of the highest importance that the dairy farmers of northern Wisconsin should arrange their barns in the best possible way as to location and accessibility, and further that they construct them of such material and

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is such manner as will guarantee absolute comfort to their dairy cows and other stock in severe cold weather. All of this can be accomplished at very little cost where the logs are used, or at reasonable cost where more permanent buildings are constructed from lumber secured at the mills.

A serious difficulty with the pioneer dairy in his first efforts at dairying is ill-favored milk resulting from cows browsing in woods in summer time and from wild leeks or onions, which are sometimes found in the newer made fields. These troubles should be overcome as rapidly as possible by the introduction of tame grasses and clover in pastures and meadows. Where fires have run through the woods and burned the trash from the ground, and where it has learned up the lower an or marshes, grass seeds should be

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We have here another evidence that all kinds of vegetables flourish in northern Wisconsin. Our view taken July 30, 1995, shows a pie plant bed in the garden of Mrs. H. H. Woledge, three miles southwest of Antigo, Langlade country. We have show a wooden chair against which stands a stalk of pie plant with the base resting on the ground while the blade of the leaf reaches above the back of the chair. Some of the stalks of pie plant were nearly as large as a base ball club. A bit of the fine strawberry bed is shown in the foreground, while in the background appears the white frame school house, a common object in the landscape all over northern Wisconsin.

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scattered in abundance, so that tame pastures may be secured at little cost.

Some parts of northern Wisconsin are already sufficiently advanced to enter upon dairying in its most modern advanced form. The more southern countries of what we call northern Wisconsin have already sufficient areas of cleared lands and pastures to warrant the construction and operation of cheese factories in very considerable numbers without further delay. Farmers in these counties have heretofore relied upon the lumber camps as markets for hay and grain; the clearings are now too numerous, the fields too many and

the crop output far too large to depend longer upon local demand. Let these farmers who are now hesitating as to what next to do embark at once in the cheese industry, and if they will start right prosperity is sure to attend their efforts from the beginning.

### **STARTING RIGHT IN CHEESE MANUFACTURE.**

In some parts of Wisconsin the manufacture of Cheddar cheese (our common Wisconsin cheese) has proved less remunerative than it should be for a number of reasons, the principal ones being that the cheese have been made in cheap, poorly constructed factories, by men who do not understand their trade and who are forced to work for such small wages that there is no incentive to produce fine goods. Again the farmers of these old cheese districts have divided up their patronage until there is such a small amount of cheese turned out daily that good wages cannot be paid. Another reason, and a most potent one, is the pernicious practice common in our old cheese counties of compelling the cheesemaker to agree to turn out one pound of cheese for each ten pounds of milk delivered by the patrons.

Northern Wisconsin should avoid these very serious blunders and start right in her cheese industry, and having begun as she should it will not be difficult to move ahead. First of all the farmers should not start a cheese factory until they can be sure of the milk of at least 150 cows from a territory within four miles of the proposed factory. As soon as the milk from this number of cows is possible, a factory should be put up and the manufacture of cheese begun.

### **BUILDING THE CHEESE FACTORY.**

The cheese factory should be located at some central point where roads converge so as to give the largest patronage possible. The building should be of good size and planned to meet all modern requirements and well constructed. Lumber is too cheap in northern Wisconsin to permit of any excuse for small or miserably constructed factories. It is not enough to turn out properly made cheese; they must also be properly cured. No cheese

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will ripen up into a wholesome food article in an open room which admits of too free circulation, and which gets hot when the summer sun shines upon it. Cheese curing rooms should be made with dead air spaces on the sides and ceiling and with double doors and windows, so as to maintain an even temperature. By the use of water in shallow pans and sprinkled on the floor, a proper degree of moisture in the atmosphere of the curing room can be maintained.

### **HIRING A CHEESE MAKER.**

It requires years of experience and practice to make

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Scene in the garden of the Thayer fruit farm, Phillips, Price country. The lands of this garden were covered with stumps and logs in the spring of 1895. Our view taken September 4, 1895, shows the vegetables set out between the rows of young currant and raspberry sprouts. A year later the plat will appear as a fruit garden and the little city of Phillips, Price county, shown in the distance will be furnished with home grown small fruits for the first time in its history.

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cheese which shall have a uniformly high quality and the patrons of the cheese factory should see to it that none but able cheese makers are employed. The question of ten or twenty dollars per month in wages is a small one compared with the steady output of fine goods which will bring the highest market price.

### **CO-OPERATIVE CHEESE FACTORIES.**

Co-operation is a excellent form of procedure with dairy farmers where intelligently followed. True co-operation means that the farmer patrons will elect two or three of their best members to supervise the operations of their cheese factory, leaving these officers to perform their duties untrammelled by the patrons. Many of these associations will get

on best by leaving the conduct of the factory wholly to a single individual, holding him strictly responsible for results. Where each patrons attempts to dictate about who shall be employed to make the cheese, how the cheese shall be sold, etc., etc., there is continual quarreling and wrangling and many failures results.

### **THE CHAIN SYSTEM OF FACTORIES.**

Canada is today taking the foreign market for Cheddar cheese. In that country single individuals or companies often own or control a whole series of factories. Under this system cheese of uniform grade and quality are made and for such cheese the best of markets are found because of the large make of uniform quality. Persons of means with large experience in the cheese manufacture will find many opportunities in northern Wisconsin in this line. Groups of cheese factories can be established along line of railway to the mutual advantage of all parties interested.

### **HINTS TO PATRONS OF CHEESE FACTORIES.**

Remember that the cheese maker cannot produce fine cheese unless he receives the milk of high excellence. See that the cows run on tame pastures and remember that leeks, will onions and weeds generally so injure the flavor of milk and fine cheese cannot be made from it. If the first products of your cheese factory are not up to the high standard, do not be discouraged, but remember that in a new country there are always difficulties to be overcome; northern Wisconsin can and will some day turn out the finest of Cheddar cheese. Let the farmer patrons of the cheese factory labor industriously and without ceasing to produce fine milk, and just as soon as this is accomplished, a good maker, occupying a good factory, will make fine cheese. Insist that the cheese maker analyze the milk of each patron and pay dividends upon the total amount of fat delivered by each. It is perfectly fair and reasonable to divide money among cheese patrons by the amount of fat contained in the milk of each patron, using the Babcock milk test to determine this

fact. When milk is paid for by the fat test, there is no trouble whatever about watering or skimming.

If the farmers of northern Wisconsin in starting the cheese industry will only adopt the recommendations here laid down, as to caring for their cows in summer and winter, in producing clean milk and building good substantial factories and curing rooms, and hiring intelligent, progressive cheese makers, this industry will start off right from the very beginning and

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Mr. Obadiah Works, living five miles from Augusta, Eau Claire county, is a successful dairyman. Our view shows a bull and four cows of the Holderness breed of cattle owned by Mr. Works. This is probably the only herd of pure bred Holderness cattle in the west. His cows average about 250 pounds of butter each per year. There is ample market in northern Wisconsin for the butter dairies, if of the quality.

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will move forward at a rate which will surprise people living in the present noted cheese sections of our state and leave these old cheese districts years behind in the competition for a cheese market, unless they, too, seek for rapid advancement through improved methods.

Thus far we have spoken only of the Cheddar cheese industry, that being the variety commonly produced in Sheboygan, Manitowoc, Outagamie, Fond du Lac and other counties. It is probable that this variety of cheese is the one which will be made in the largest quantities in northern Wisconsin, since it is the common American food cheese. There are, however, many varieties of cheese which find ready markets in this country, and northern Wisconsin should prove a good locality for the manufacture of these, because of its peculiarly favorable conditions. Not only persons seeking localities for the manufacture of Cheddar cheese, but those thinking of making fancy cheese should examine the older settled districts of northern Wisconsin, some of which are

now sufficiently develop to afford mild in quantity and of quality satisfactory to the most exacting.

### **CREAMERIES IN NORTHERN WISCONSIN.**

It goes without saying that a country that can produce milk of high grade for cheese must also produce fine butter under skillful management, and such is the case in northern Wisconsin. While the cheese industry should certainly prove an easy leader in dairy effort, let those who do not for this line of manufacture turn their attention to the creamery system of butter making. Co-operation is the order of the day, and it is unwise and unfair for the farmer to compel his wife to make butter along with all her other duties when this laborious art can be shifted from the farm to the creamery. There are already quite a number of creameries in the more southerly counties of northern Wisconsin. The majority of these are succeeding most excellently well. At Cecil, Shawano county, we found a gathered cream factory making 700 pounds of butter per day at the time of our visit, and other factories were found, in our travels, extending clear across the state from Oconto to Polk county.

### **GATHERED CREAM FACTORIES.**

The pioneer form co-operative butter making is the gathered cream system. In this the farmer sets his milk in deep cans, plunged in water tanks or springs. The cream which rises from the milk is skimmed off, measured and poured into large cans and carried to the central factory on the cream gathering wagon. The cream gatherer makes long trips daily, starting out from the factory in the morning, by one highway, often calling on patrons as much as ten or twelve miles distant. Gradually he picks up a load of cream, returning by another road to the factory at nightfall. Usually there are several wagons gathering cream for a single factory. Under this system the skim milk is left patron to be fed to the calves, pigs and chickens. The cream thus gathered from many farms is churned at the central factory, packed into tubs and sold in the adjoining towns or shipped to distant markets.

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This system is an excellent one for a country where the farmers each have only two or three cows and are not yet ready for more advanced dairying.

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Marathon is the banner county in all northern Wisconsin for agricultural improvements. As one travels along its well-made highways he notes large districts, which by their fields, houses and barns, remind him of the well improved sections of Outagamie or Fond du Lac counties. Our view shows the comfortable brick house and large frame barn of Henry Hoff, Naugart, marathon county. The primitive long barn appears in the left of the picture. There are many brick houses and large barns in this section.

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### **THE SEPARATOR CREAMERY.**

When the dairy industry is further advanced, the separator creamery comes to take the place of that using gathered cream. Under this advanced system the farmer sends his milk direct to the creamery, usually in large loads. Here the milk is run through power separators which remove the cream from the milk, leaving the latter for the farmer to take back to feed to stock. The cream thus separated is carefully ripened in the creamery and under good management is converted into the highest grade of butter. The separator creamery can be adopted by neighborhoods where the farmers can guarantee milk of from two to three hundred cows within a radius of four miles from the factory.

### **PRIVATE DAIRYING.**

Where a country is quite new and the settlers much scattered, the dairy farmer must take of his own milk in some way, and this necessitates the home manufacturer of butter. For raising the cream a spring-house can be utilized in some instances but usually it is better to locate the little house close beside a good well, will furnish an abundance of pure cool water. With proper care fine butter can be made in the private dairy and this will always find a good market in the villages, lumber camps and towns about, or it may be shipped



to the commission market. We know of farmers in northern Wisconsin who are shipping butter a thousand miles to private customers. In our chapter giving the experience of settlers, we learn of a Clark county farmer who has paid off his mortgage with butter made on the farm, and another reports successful results in Chippewa county with butter from pure bred Jersey cows. This shows us that while the dairy farmer may prefer to co-operate with his neighbors in the manufacture of cheese or butter, yet if circumstances do not favor him, he is still able to go on in a private way.

### **TAME PASTURES OF HIGH IMPORTANCE.**

Northern Illinois, southern Wisconsin and Iowa are known as dairy regions where butter of high quality is produced. The basis of this reputation is the fact that dairy cows of this region are fed on tame pastures in summer and in winter are well cared for and are fed upon both hay and grain. Cows that are starved in winter about straw stacks and which browse in the woods in summer cannot give milk that will make high grade dairy products. The would-be dairy farmers of northern Wisconsin must regard the matter of pasture as of great importance and should remember that they cannot make fine butter or cheese until their cattle are summer-fed in this way.

The fires which have worked such havoc in northern Wisconsin have fortunately cleared off lands sufficient in thousands of cases to enable the settler to provide good tame pastures if he will only sow grass seeds which will cost him little. Let these pastures be extended and improved just as rapidly as opportunity offers, for their and perfection are the only limits to the output of dairy goods of fine quality in northern Wisconsin.

### **NORTHERN WISCONSIN A GREAT DAIRY SECTION.**

In 1895, Canada exported sixteen million dollars worth of cheese. The country of Denmark covers

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Our view, taken at Saxon, Iron county, September 27, 1895, presents a scene not uncommon at the north, and the traveler who passes by rail or along the highway observes the great ruin wrought to forest by fire and wind. The lands here shown were somewhat damp, though not a marsh, and supported a rank growth of deciduous and cone bearing trees. Fire gained entrance during the year of 1894 and a wind storm in 1895 completed the wreck.

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about half as much area as that region which we are pleased to call northern Wisconsin. During the past year Denmark has received from Great Britain for butter alone about twenty-four million dollars, or two million dollars every thirty days. Canada and Denmark are shining examples of what is possible in the dairy line, when the people set about making honest high quality goods, and are earnest in securing good markets for them. Let the splendid results obtained by these two countries prove an example for our new north, which shall stimulate it to the highest and best effort possible. Our own nation with its seventy millions of people stand ready to use the dairy goods from this region, provided only they are of high quality and known purity. With the passing away of the vast forests and the disappearance of the lumber industry, which has brought its hundreds of millions to our country, let there come to northern Wisconsin advanced methods of farming with dairying as the leading industry, and the prosperity of this region is assured beyond all question.

On the Peshtigo river in Marinette county.

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To give our readers some idea of the intermediate condition between forest and farm, we have introduced a view of the home of A. G. Beebe, Bruce, Chippewa county, taken September 26, 1895. In the foreground are the many stumps with some logs yet not out of the way. On the cleared lands beyond is shown the fine barn and house of Mr. Beebe.

In the barn is a silo 14x16, 26 feet deep, two-thirds filled with corn. This will be fed the present winter to his herd of ten cows and flock of seventy sheep.

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**Personal Experiences of Some of the Successful Settlers in Northern Wisconsin. W. A. HENRY.**

In every community in this country can be found individuals who by industry, well directed effort and economy are not only making a comfortable living but getting ahead in the world; no section of the Union can today excel northern Wisconsin in the general prosperity and advancement of her people when the small amount of capital they brought with them to their new homes is taken into consideration. Nearly all of the people who have located in northern Wisconsin have brought with them very little of this world's goods, and what they may have today is almost entirely the product and outcome of their own efforts and savings.

We always like to hear the successes of individuals recounted and learn of how they attained success. There could have been gathered for this Hand Book hundreds of experiences of successful settlers in northern Wisconsin, but it has been thought sufficient to present a few only which are typical of what has been done and which are of such character that they can be duplicated by other new-comers, provided only they will follow the same general means of reaching success.

The statements here made are either sworn to by the persons making them or vouched for by persons known to us, so that the reader need not doubt their accuracy. We believe their careful perusal will be helpful to many in stimulating them to renewed effort in the desire to be the possessor of a farm home of their own.

**A GERMAN IMMIGRANT'S EXPERIENCE IN DUNN COUNTY.**

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Theodore Louis, a German immigrant, located in 1865 on a government claim near what is now Louisville, Dunn Co. He took up a homestead, and 25 cents represented his worldly possession aside from the clothing on his back. The land for his first crop in his little clearing was prepared by spading, as he was too poor to employ a team. Mr. Louis embarked in grain growing, as did many other farmers of his day, and after many years of hard labor he found the fertility of his farm depleted and his possessions encumbered by a debt of about \$1,500. Necessity forced him to study the cause of his failure and turn to hog raising for relief. Gradually the hogs paid off the debts and improved the quality of his land so that red clover, which had done poorly under wheat raising, came to his aid for feed and fertility. Not satisfied with plain, common hog raising, Mr. Louis chose the Poland China breed as his guiding star and has had much satisfaction in this line of work for many years past. To date he has sold more than 800 pure bred hogs.

Opposite we show a sketch of Mr. Louis' cabin home made at the time as it appeared in the days of wheat raising. We also show his home as it appears today.

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View of the log cabin home of Theodore Louis, Louisville, Dunn county, after an experience of many years as a wheat grower.

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It was through the Grange that Mr. Louis first appeared on the platform as a speaker, his theme first and last being "The Hog." He has spoken from the Institute platform in every village and town in Wisconsin and Minnesota, and has been called as far east as Boston to talk on his favorite theme. No farmer in the northwest has a wider acquaintance than Mr. Louis. Opposite we present a view of Mr. Louis present home.

### **EXPERIENCE OF SOLON B. DAVIS, CLARK COUNTY.**

Solon B. Davis purchased 40 acres of wild timber land 7 miles northeast of Neillsville for \$700.00. Having paid for that he next bought 20 acres of timber, and then in 1885

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purchased 40 acres more with some improvements for the sum of \$1,500.00; of this last sum he borrowed \$1,200.00, which was so large a debt that it was predicted by some of his neighbors that he would never succeed in clearing the encumbrance. These doubting neighbors were in the habit of leaving their farms each winter to work for wages in the woods with their teams. Mr. Davis remained on his farm, giving much attention to his dairy. In 1893 he paid the last dollar of his mortgage and says it was all paid by butter. He now owns 100 acres of land, 80 of which are improved. He keeps 20 cows and a sufficient number of hogs to use up the sour milk. From records kept we are able to give a statement of his business for three years.

In 1892 from 19 cows he realized for his butter \$611.07 and from hogs \$160.00 total \$771.07.

In 1893 his sales of butter amounted to \$987.38, from hogs \$175.00, total \$1,162.38. This was a good year and his returns were so large that he was able to clear off the balance of the \$1,200.00 mortgage.

The year 1894-5 has not been so profitable because of lower prices for butter. He has been building and improving his place during the year and for this reason has milked only 14 cows. His returns from butter for the year 1894-5 amounted to \$466.55, from hogs \$162.60; total \$619.15

Mr. Davis use the hand separator for separating the milk, this machine having cost him \$125.00. He has sold no butter this year for less than 18 cents, and his sales in December, 1894, netted him at home 24 1-2 cents. Some of the farmers in the neighborhood disposed of their butter at the country stores, taking their pay in trade, while Mr. Davis ships his to good commission houses and always gets the highest prices.

Having now paid for all of his property, he is ready to buy another farm though he is yet but 47 years of age.

He puts all of his corn fodder into the barn and cuts it with sheaf oats with the feed cutter. He buys bran and shorts to mix with this for his cows and makes butter largely in the winter it commands a high price.

### **EXPERIENCE OF CHARLES COLMAN.**

Charles Colman located near Butternut, Ashland county, 15 years ago. He came there without any money; he now owns 80 acres of land, 35 of which are cleared and yielding very fair crops, as was seen at the time of our visit to his place. He has one yoke of oxen, which are shown in the picture, 5 cows, besides sheep and hogs. Having started with no means this pioneer supported his family and paid for his 80 acre

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View of the home of Theodore Louis, Louisville, Dunn county, as it appears today. After a bitter experience with wheat growing, Mr Louis turned to hogs and clover for relief and the above gives some idea of the successful results attained.

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tract by cutting cord wood, which was drawn to the charcoal pits at Butternut. Mr. Colman was seven years in paying for his farm. He came from Sheboygan county and states that he finds that any crop will mature on his land at Butternut which will mature in Sheboygan county near the shores of Lake Michigan. We give a view of Mr. Colman's home as we found it on our visit to Ashland county September, 1895.

### **EXPERIENCE OF E. M. MAXWELL, BARRON CO.**

E. M. Maxwell, residing six miles west of Cumberland in Barron county, came to this township seven years ago with wife and one child. Had one cow and was \$30.00 in debt. He homesteaded 120 acres and settled on it. Two years later he purchased 80 acres more of wild land at \$2.00 per acre, paying cash therefor. He now has 170 acres of land cleared

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and fenced; has a good frame house 18x28 ft. in size, with addition 16x22 ft.; two frame barns, one 36x60 with stone basement, and one 20x60 ft. for hay.

Has 5 head of horses; 13 head of cattle, 12 sheep a good lot of poultry and 91 colonies of bees in good condition. He has a self-binder, mower, hay-rack, plows, cultivators, etc. He is out of debt and has \$200.00 standing at interest.

### **EXPERIENCE OF WM. N. CROSSMAN, BURNETT COUNTY.**

Wm. N. Crossman, being duly sworn, says that he came to Burnett county in February, 1894. He had a wife and a little girl, \$100 in money, team, cow and some tools. He took up a homestead of 40 acres and bought eighty acres adjoining, going into debt \$550. He is located in section 29, town 39, range 19, and is near the St. Croix river.

Forty acres were cleared when he took the place and it was badly run down. He has cleared fifteen acres more on his homestead. His soil is a dark sandy loam and the standing timber is oak. He has raised two crops and has marketed none of the 1895 crop as yet, owing to the present low prices. The year before crops were poor. He has paid \$230 on his farm, has four horses, seven head of cattle, nine hogs, and plenty of tools to work with. He is practically out of debt save the mortgage on his farm and that could be wiped out this year, if there was a better market for his crop.

### **A PIONEER'S EXPERIENCE IN BURNETT COUNTY.**

A. B. Lundberg, being duly sworn, says he came to Burnett county in 1882 from Sweden as an emigrant with no means. His family consisted of wife and six small children. He bought 160 acres of what is known as "sand land" on the W. 1-2 S.W. 1-4, S 29, T. 37, R. 19, and the N. 1-2 of N.E. 1-4, S. 32, same town and range. This land was bought on time and is what is commonly known as barren land, not the best either. At present he has 100 acres under the plow and by a systematic plan of tilling the soil has enriched it to such a degree that it is second to none in the town.

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His crops for the last season consisted of 1,700 bushels of small grain, 500 bushels of corn, 2,000 bushels of potatoes, besides garden truck and cereals not enumerated. He has 25 head of cattle, 6 horses, swine and sheep; he has erected one of the best farm dwellings to be found in the town and has barns and a

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View of the home of Chas. Colman near Butternut, Ashland county, taken September 5, 1895. This pioneer settler has wisely chosen to use oxen on his farm instead of horses, such animals being cheaper, more useful in many cases, inexpensive for feeding, and often selling for more than first cost when a change is needed. Many of the pioneers in northern Wisconsin should use oxen rather than horses while their fields yet have many stumps and farming is in a crude, partially developed condition. Mr. Colman's oxen wear a neat harness with collar, guaranteeing comfort, instead of the crude, painful yoke.

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granary. He says \$3,000 will not buy his farm today. Besides he has bought several tracts of land and natural meadows, and is entirely out of debt. He is worth today at least \$5,000, all of which was made on lands heretofore condemned as barrens.

### **EXPERIENCE OF A MILL-HAND IN MAKING A A FARM IN LANGLADE COUNTY.**

Anton Follstad, a view of whose home we show at Elcho, Langlade county, reports his experience in a letter as follows:

"I came to Elcho in the fall of 1885 to visit cousins who had each just purchase a 40 of land, and as the fine hardwood timber, rich soil and beautiful Otter Lake took my eye I concluded to buy two 40's next to my cousin and alongside the lake. The price of the land was \$4.00 per acre, and as I had about \$300.00 saved up I paid \$280.00 down and the balance within a year. I went back to work in the saw mill in Rhinelander where I had been working some years. In the spring of 1887 I came to Elcho to start farming, with little knowledge of tilling the soil and not very good health but with a good will and a mind made



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up to stick to it. Have had great help from reading the agricultural papers and the bulletins of our experiment station and the Farmer's Institutes.

"I cleared off a spot where I put up a log house and then cleared about two acres more, one acre I planted to potatoes with the grub hoe; had a good yield and sold all I could spare to families connected with the veneer factory. In the fall I bought an ox team for \$150.00 cash, cut and hauled about 80 thousand feet of hardwood logs to mill that winter at an average price of five dollars per thousand, and I cut about the amount and put in the next succeeding four years from my 80. This gave me a start and I have cleared some land each spring, which I generally plant to potatoes the first year as by this means the ground gets into condition to receive oats, timothy and clover the next spring. The oats I always cut green for hay. In planting potatoes I break my new clearing grounds, drag it well and then set the plow out as far as it can be set and plow furrows crosswise; put the seed in the furrow twelve to sixteen inches apart and pull the loose dirt over the seed with a potato hook, making the ground level. I do no more

House of Anton Follstad, Elcho, Langlade county.

with them except to kill the potato beetles, as ground well burned over will not grow many weeds the first year. In fair year I get about 250 bushels of fine quality potatoes and about 50 bushels of green end ones which I use for seed the next year. The green oats cut when in milk give an average of twenty-five thousand pounds per acre uncured.

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Our view, taken at Saxon, Iron county, September 27, 1895, presents a scene not uncommon at the north, and the traveler who passes by rail or along the highway observes the great ruin wrought to forest by fire and wind. The lands here shown were somewhat damp, though not a marsh, and supported a rank growth of deciduous and cone bearing trees. Fire gained entrance during the year of 1894 and a wind storm in 1895 completed the wreck.

"Four acres of potatoes planted this year treated as above describes took only sixteen hours work for cutting out the weeds, poisoning the bugs; have just completed digging and have 1,460 bushels, giving 1,050 bushel selected potatoes and 410 bushels some what sunburned, and the smaller ones, which I shall use for stock feeding.

"Have now twenty acres of land cleared and part of it stumped. Have an interest with my brothers in a team of horses and three milch cows. My house, built two years ago, cost me \$800.00, borrowed \$500.00 for this which is now half paid. Have always sold my produce at home to the lumber camps and to families at good prices."

#### **THE SPLENDID RESULTS ATTAINED BY A CHIPPEWA COUNTY PIONEER.**

W. B. Bartlett, Eagle Point, Chippewa county, Wis., a view of whose home and herd of Jerseys and strawberry field we are able to present to our reader, in response to a request for his experience, writes:

"I came to this country November, 1861, having had to borrow \$50.00 to get me here. Located on this farm in 1863, at which time it was all wild land about here; bought my first 40, running in debt for it; when this was paid for I bought another 40 and so on until I now have 160 acres all improved. I have stuck to the farm, working out some and teaming some in the early days. I now have ten Jersey cows and have sold ten during the last year. I sell my butter to private customers in northern Michigan, getting 25 cents per pound by the year delivered at the express office. Have raised from one to two acres of strawberries for several years, but have had larger areas planted for the last three years. This year have six acres planted with 14 varieties. Formerly I kept Durham cattle but found the Jerseys were more profitable."

We show Mr. Bartlett's splendid home on the opposite page.

## WHAT HAS BEEN ACCOMPLISHED IN POLK COUNTY.

The following account was procured for us by Ole Larson, County Judge of Polk county, who vouches for its accuracy:

Frederick Sorensen, living 2 1/2 miles south of Osceola, Polk county, was born in Denmark 48 years ago, came to America in 1866, arriving with \$2.00. Hired out for \$18.00 per month, which wages he lost through the dishonesty of his employer. Mr. Sorensen came to Polk county in November, 1866, went to work in the woods at \$26.00 per month. Worked on farms in the summer at grubbing, clearing land for farmers, etc., and in the winter for the lumber camps. About seventeen years ago he married and has a wife and three children.

In 1889 Mr. Sorensen went to a distant state with a view to settling down, but after losing eight months returned to the St. Croix valley. On his return he purchased 80 acres of land for \$3,000.00. The buildings then consisted of a small frame barn and an old frame dwelling house. He has now built a new house with eight comfortable, nearly finished rooms and has purchased 80 acres of timber land near Osceola. In 1895 he raised on his 80 acres sixteen tons of tame hay, three hundred bushels of corn and about two thousand bushels of potatoes. Has a poultry house

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Here is presented the ideal home of Mr. J. B. Bartlett, Eagle Point, Chippewa county. The lover of fine cattle will be delighted with the herd of beautiful Jersey cows in the foreground, and the horticulturist will feast his eyes on the great strawberry bed of six acres containing fourteen varieties, shown above. It is quite a step from the log house, the little clearing and the stumps, to such a scene as this, but it is entirely possible in northern Wisconsin to any one who is guaranteed good health and has the ambition for such a possession.

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14x24 feet and raises many chickens. He has all the necessary machinery for use on the farm, including a self-binder and potato digger. He keeps three work horses, but most grain raisers in Polk county, does not keep as much stock as he should.

Mr. Sorensen is entirely out of debt.

### **WHAT HAS BEEN ACCOMPLISHED BY A WASHBURN COUNTRY SETTLER.**

D. A. Stauffer 80 acres of land seven miles northwest of Shell Lake, in 1888 at \$2.50 per acre, paying for it in installments. He had a wife, three children, a team some farm machinery and \$350 in money. At the end of eight year he now finds himself the owner of 120 acres of land, 60 of which is under the plow; has horses, five cows, two yearling heifers, five hogs, a self-binder, mower, hay rake, etc. He has a good frame house, well furnished, a frame barn 36 by 40 feet, and other necessary outbuildings. He holds his property entirely free from debt. The crops, he raises consist of wheat, oats yellow dent corn, hay potatoes and many kinds of vegetables.

### **WHAT HAS BEEN DONE IN WOOD COUNTY.**

In 1865 T. C. Timm located with his parents five miles east of the city of Grand Rapids, Wood county. In 1874 Mr. Timm started for himself, having \$700 in money at this time, with a portion of which he purchased 120 acres of land in the same town at \$1.50 per acre. He has steadily added to his first investment until at the present time he holds title to 520 acres. His cleared land comprises 160 acres, embracing some fine hay marsh lands and good pasturage. He occupies a well built two story frame dwelling, with cellar, and good outbuildings and barns. Mr. Timm along with other farmers in his locality has given much attention to dairying with excellent success. His milk, delivered at the cheese factory, two miles away, brings him 65 cents per hundred in summer. He is a part owner, along with nine other farmers, of the factory; this brought them a dividend of 20 per cent, on their investment last year. His farm in a sandy loam of the same character that predominates

in the eastern part of that town. The crops he raises consist of buckwheat, corn, rye, and potatoes. He has made the most money from potatoes. Roads are good at all times of the year.

**WHAT AN INVESTMENT COMPANY WITH LONG EXPERIENCE FINDS IN REGARD TO FARM MORTGAGES IN NORTHERN WISCONSIN.**

In the new north it is not at all uncommon for settlers after a few years' effort in clearing up their farms, to secure a small loan in order to make desired improvements. This loan is made in the belief that the money will bring improved conditions which will more than pay the interest and in the end the principal obligation. Desiring to know whether or not such loans were satisfactory as an investment a communication was addressed to the president of the Savings Loan & Trust Company, Madison, which brought the following answer.

"Office Savings Loan & Trust Company, Madison, Wis, Dec. 30th, 1895. Prof. W. A. Henry, Madison, Wis.

Dear Sir:—Replying to your inquiry as to my experience in loan matters in the counties of Pierce, St.

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Properly cared for bees give returns in northern Wisconsin, and scores of bee raisers possess from 20 to 100 or more swarms. Our view shows a portion of the 50 hives owned by Bernhard Volkering, East Farmington, Polk county. In northern Wisconsin bees are wintered in the cellar, where they can be kept economically and with little loss. The one town of Cumberland, Barron county, produced 29,00 pounds of comb honey, mostly from white clover, in 1895.

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Croix, Polk, Barron and Dunn in this state, will say that I have been more or less engaged in placing farm loans in the counties named for over twenty years. We have made,

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perhaps, some 1,400 loans therein and the investments have been very satisfactory. Foreclosures have been very few,—probably not over two for each hundred loans made.

Very respectfully yours, (Signed) Halle Steensland, President.

This letter is a whole chapter in itself on the safety and permanence of our northern Wisconsin farm settlements, and nothing stronger can be brought forward to show the large percentage of those who reach success, or, at least, do not lose their property through foreclosure of mortgages. There is nothing brilliant or fascinating in clearing up a farm from the woods, but as means of gaining a safe and sure farm possession, no other section of our continent can excel the region we are studying.

H. C. Larson purchased eighty acres of land near Patterson, Polk county, eight years ago at \$700 per acre, paying \$30 down. Two years ago he made his last payment. We show a view of his clearing with the fine crop of corn in the foreground and his cabin home in the background with the hard wood beyond. Mr. Larson owns five cows, one calf and one pig. He has never owned a team, but exchanges work with neighbors when one is needed.

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After clearing away the forest trees there remain many stumps in the fields. Stump lands are usually seeded to grass and yield fine crops of hay or pasture for many years. The stumps standing among the grass of the meadows are removed without great difficulty after a few years. Our view, taken September 3, 1895, on the farm of Chris, Paustenbach, three miles east of Medford, Taylor county, shows a stump machine by the aid of which a single horse can lift the largest stump.

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### **A Talk with the Homeseeker. W. A. HENRY.**

This Hand Book is prepared by Professors of the Agricultural College of our State University by the authority and direction of the legislature of Wisconsin. As employes of the

state, we have done the work fairly and we believe without undue preference or prejudice for the region described or any particular portion of it. We realize that we cannot afford to draw homeseekers to our state through misrepresentation or overcoloring, because, were people to come to us under such conditions, dissatisfaction would surely follow and blame be justly attached to us. Whoever becomes interested in northern Wisconsin through what he may learn in this Hand Book is urged to carefully read the present chapter in order, to be properly posted on the difficulties and hardships to be met, as well as to learn how to avail himself of the opportunities offered.

### **CLEARING A FARM FROM THE WOODS A LABORIOUS TASK.**

First of all, let it be distinctly understood that clearing up a farm in a wooded country is an undertaking requiring much hard labor extending over a period of years; the amount of material in the shape of trees, living and dead, together with the brush, stumps and undergrowth, is often sufficient to make one's heart grow faint when he thinks that the entire removal of this great mass is necessary before an ideal field can be secured. There are people who from nature or previous training can enter our wooded districts prepared to cope with the difficulties at hand without fretting in the least, and undertake the work in such manner as to insure success from the beginning. Others who do not understand what clearing up a farm from the woods means may fancy it an easy task as they sit reading this book, and looking at the many views it carries; actual contact with the problem may dispel this illusion and cause them to grow faint-hearted and give up in despair. No one should make the venture of home building in the new north before he has carefully counted the cost in the beginning and looked clear through to the end.

As an offset for all the difficulties and discouragements of home building in the woods, the settler should note that there are some points strongly in his favor even in the beginning. First of all he is sure of a comfortable house to live in, since, one can be secured at an insignificant cost for all of the materials required; second, he has about him an abundance of fuel to keep him warm during the cold winters. Again, there is the best of water in

abundance of his own use and the rainfall is so abundant and generally so well distributed through the growing season that he has no more to fear from drought than do farmers in the other eastern states. The farms in northern Wisconsin will always be small, and this means neighbors near at hand as soon as the

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There is no royal road to farming in northern Wisconsin; every acre requires hard labor to clear, though the amount of work will vary greatly with the intelligence and good judgment of the persons clearing the land. Our view, taken on the farm of Gustave Voight, two miles south of Merrill, Lincoln county, gives a good idea of how half cleared lands appear. The logs gathered for burning are shown in the middle ground; the hard wood forest yet untouched by the ax appears in the background.

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county is somewhat settled, and with the influx of settlers comes good schools, churches and other community advantages. When figuring out how slow must be the progress in making a fine farm out of the wooded districts, the settler must take into account all of these advantages, which are not promised to him who settles in prairie regions still offering lands at about the same price as ours.

### **STARTING WITHOUT MEANS.**

The people who are thinking of settling in northern Wisconsin represent all degrees of means for making a start. Not a few men with families to support who have practically no money with which to purchase lands; let such understand that hundreds and thousands of families have settled on lands in our state in past years and that all of this class who were thrifty and hard working, have been able to secure a piece of land and make comfortable homes, while many have reached positions of independence.

There is still room for thousands of ablebodied men having families but without means, in northern Wisconsin, provided only they and their families are of the right material. It



must be plainly understood that whoever succeeds in farming at the north without money in the beginning must be possessed of that other capital, a sound, healthy body and a willingness to do hard manual labor and much of it, coupled with pluck and determination. The pioneer with a family to support must have a wife who is economical and helpful and the children must be willing to "lend a hand" as soon as each is able to be of help, though even in but a small way. All settlers, no matter how poor are sure of the bare necessities of life if they come among us, provided they are temperate, willing to do hard work and for a time forego all approach at luxuries. A log house or one made from the cheaper grades of lumber must serve as the first dwelling, and the furniture must be simple and the food, while substantial, must be of the plainest and the least expensive kind. Further, all of the food that can possibly be raised on the farm must be procured there instead of purchased from the store.

### **OUR TIMBER RESOURCES OF THE HIGHEST ADVANTAGE TO THE PIONEER SETTLER.**

It is through her timber resources that northern Wisconsin differs so greatly from the strictly prairie regions in affording persons without means or of limited resources, the ability to get on. The newcomer after locating can usually hire out to work in the logging camps and saw mills. In the fall he leaves his family and goes long distances into the woods to work in the logging camps, felling pine trees, and moving the logs to the banks of the streams down which they are floated in spring time to the mills. Thousands of settlers in northern Wisconsin find work of this character every winter and are given preference by the lumbermen because they are steady and save their money, which makes them more valuable to their employers than were they careless with their earnings. Returning from the woods in the spring, the money which the logger has saved enables him to live through the summer while spending his time in clearing up the woods and making a farm. If the winter earnings do not carry him through the summer, work may be had in the saw mills, which in summer time work up into lumber the logs cut the

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View of charcoal kilns or pits at Saxon, Iron county, taken September 27, 1985, showing how cord wood is converted into charcoal for the iron furnaces. The hardwood districts of northern Wisconsin stand in strong contrast with the plains region of the west. There the settler, no matter how much in need, must rely on one crop a year, be that what it may, for subsistence. Here, while clearing his farm from the woods, the settler sells wood to the charcoal burners, ties and telegraph poles to the railroad companies, and hard wood logs to the mills; thus he is sure of funds sufficient at least to meet the immediate necessities of his family.

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preceding winter. The number of years which must be spent in the woods or in the saw mills by the pioneer settler varies greatly according to the ability of such persons to get on in their business of farming. Some of the most thrifty settlers work in the woods but a year or two and after that devote their whole time to their farms; it is unfortunately true that others fall into the habit of depending upon the winter's earnings in the logging camps for their summer subsistence and lead a shiftless life, not diligently clearing up their lands and making good farms.

### **EMPLOYMENT IN THE HARD WOOD DISTRICTS.**

Hard wood logs cannot be floated down streams like pine logs, and so the hard wood lumber industry is confined to points directly accessible to the railway lines. In these district large numbers of logs are prepared in the winter and drawn to the mills, the work continuing sometimes all summer. The settler can often get work in the hard wood sections, but there are not so many laborers employed for wages in getting out hard wood logs as in the pine districts, for the reason that much of the logging is done by settlers who are clearing up their own lands and devote their spare time to getting out logs and drawing them to the mills.

A settler with a little available money can purchase a tract of hard wood land, which will furnish work at log getting from the very beginning, thus making himself independent of other for opportunity to earn needed cash. The prudent settler will be careful in clearing these lands to cut off the timber from a limited tract only at one time, making careful use of every available piece of timber. All of the trees that will not make logs suited to the saw mill are turned into cord wood for shipment to cities, or for the charcoal pits. Judiciously managed, there is in the left of the hard wood forest when properly cleared aside from the brush and decayed material which is removed by the fire. By harvesting a limited amount of timber each winter a very considerable income can be secured by the land owner for many years and a comparatively small tract of land will furnish a great deal of steady work in addition to that required for growing farm crops on the cleared portion.

### **INCOME FROM THE SALE OF HEMLOCK BARK.**

Another source of income to the pioneer is from the sale of hemlock bark to the tanneries. There are now many very large tanneries located in northern Wisconsin and many more will soon be established. These tanneries pay out hundreds of thousands in dollars each year for the bark of hemlock trees furnished them by land owners. Much of the land in northern Wisconsin which carries hemlock timber is of excellent quality for farming purposes and the settler who possesses a tract of such land will clear off a portion each year, turning in the bark to the tannery. The logs from which the bark has been stripped will be converted into lumber, thus bringing a second revenue. Like the prudent woodsman in the hard wood tract, the owner of hemlock lands will open up the forest no faster than he can harvest the timber in a profitable, economical way.

### **WOOD FOR CHARCOAL PITS.**

The iron furnaces at the north and elsewhere use an enormous amount of charcoal yearly. The charcoal

View of pine forest nine miles southwest of Washburn, Bayfield county. Through the central portion of the view is shown an opening made for a narrow gauge logging railroad. Much pine is now harvested in summer by the use of temporary railroads often ten or fifteen miles in length. The pine on this tract was estimated to yield one million feet of lumber to each forty acres. View taken September 6, 1895.

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is made from hard wood cut up into cord wood lengths and converted into charcoal at the various railway stations. Wood of a lower grade than ordinarily required for cord wood can be used for charcoal. This industry supports a great many pioneers and affords them a living while turning their wooded lands into cultivated fields. There is every prospect that the charcoal industry will materially increase its demand for hard wood in the future.

### **RAILROAD TIES, FENCE POSTS AND TELEGRAPH POLES.**

Vast quantities of railroad ties, posts and telegraph poles are annually marketed by the settlers of northern Wisconsin at the various railway stations. The returns from this source must run up into the hundreds of thousands of dollars each year, a great part of which sum goes to those who are land owners and in need of ready money to tide over the present until sufficient land can be cleared to insure a living from continuous farm labor.

### **THE FORESTS WILL LAST A GENERATION YET.**

While in some places the forests have already been destroyed by the lumbermen or by fires, or both, there are still great sections untouched by the ax and uninjured by fire. These forests are rising in value and with their increased worth will come more watchfulness in regard to forest fires and more reasonable and close use of all of the timber. Judging from the experience of the hard wood districts of northwestern Ohio, parts of Indiana, etc., it is most evident that in some sections of our new north the forests will yield returns of timber for a full generation to come, at least.

### **RECKLESS CUTTING OF TIMBER SHOULD BE AVOIDED.**

The imprudent, reckless settler chops over his holding as soon as possible, picking out only the choicest trees and by felling these indiscriminately wastes much of them; by this means he lets in the sun and invites fire, which in a dry time sweeps through his possessions ruining hundreds of dollars worth of valuable timber in an hour on his own lands, and often working great harm to the possessions of others near his own.

We have now mentioned several ways by which the pioneer with or without other means may gain a livelihood as soon as he comes to the newer parts of our state. Another means of gaining immediate aid is to work for the settlers already possessing farms and needing additional help, though, of course, this opening is of but limited character as yet, in most districts.

### **HARD WOOD FOREST HOLDINGS FOR SETTLERS HAVING MORE OR LESS CAPITAL.**

The settler possessed of more or less means comes to our country at the north with many opportunities to get on from the very start. By locating in the hard wood district he can yet secure lands for a low price, which carry a forest of timber already possessing considerable value and which is sure to double many times in the not distant future. He can] hold this tract of forest land as a possession which, economically and wisely used, will yield him a safe and sure income for a life time. Our hard wood forests are practically free from destruction or injury from fire so long as no timber is cut in them, and our settler

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The numerous lakes and streams of northern Wisconsin are a source of much pleasure to the thousands of fishermen who annually visit our state for that sport. Our view, taken August, 1894, shows a muskallonge weighing twelve pounds caught by A. A. Bish on Long Lake, Chippewa county.

with means will clear up these forests carefully, and judiciously using all of the timber as he comes to it, until after a time he has cleared a large tract for field crops, thus assuring a second source of income, while the remainder of the forest is held for future opportunity.

### **FOREST LANDS RUINED BY FIRE.**

There are hundreds of thousands of acres of land in northern Wisconsin which carry trees that have been ruined by forest fires. In some places the fires have swept over the tract but once, and in this case whatever there is of dead timber has been partially burned while the trees which were green have only been deadened by the fire. Often a fire goes through such woods a second time and when this takes place much of the useless material is entirely consumed, leaving the surface of the land well exposed to the sun and quite free from trash. Generally after the first fire and always after the second burning the seeds of grass can be sown over these lands and pastures or meadows established at only the cost of the grass seed and the little labor of distribution. Lands of this character can be purchased at small cost and upon conversion into pastures and meadows will give the settler some income at an early date. Of course the settler who locates on such tracts has no compensation in the timber it carries, though it will furnish ready fire wood and logs for many years.

### **ABOUT FOREST FIRES.**

Many persons have been deterred from settling in northern Wisconsin through the dread of forest fires, and consideration of this subject not out of place. Our readers should understand that where the forests remain untouched by the ax they are of such dense character because of the spread of the tree tops that the sun is shut out and the ground is kept moist under its carpet of dead pine needles and decaying leaves which form a mulch and insure protection against fire. When trees are felled and the sunlight let in, the pine needles and leaves dry up and the branches of the dead trees become dry, so that during

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a warm dry time in midsummer but a spark of fire is required to start a conflagration. If everything is unusually dry and the winds are favorable a fire of great fury rages, often sweeping for miles and doing immense damage.

In many cases there is a possibility of a second forest fire, which is brought about as follows: The first fire not only kills the trees but burns off the mold about their roots. A year or two later a heavy wind tips over the trees, throwing the trunks and branches into a tangled mass. When this becomes dry a second fire of great fury rages, but fortunately this clears off the land, often leaving it ready for the plow, so that there is no dread of further fire in that section. Timber in our state, which would some day have been worth tens of millions of dollars, has been destroyed by forest fires. That there will yet be some severe forest fires in Wisconsin is not denied, but it is likewise true that in a great many sections all dangers from this cause are forever past, because the material which feeds the flames has already been consumed. The settler who fears forest fires can easily place himself out of all danger by locating in districts where the fires have accomplished their dread work.

So far as our studies go it appears that in nearly

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View of saw mill of the Northern Wisconsin Lumber Co., Hayward, Sawyer county. This mill has a capacity for cutting 200,000 feet of lumber, 50,000 lath and 40,000 shingles daily, requiring 120 operatives. The output for 1895 was, in round numbers, lumber 32,000,000 feet; lath, 9,000,000; shingles, 4,000,000. Three hundred men and 300 horses and oxen are required in winter time for getting out the logs.

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all cases the forest fire have either left the land uninjured for agricultural purpose or harmed it but very slightly indeed. Grass seeds sown upon lands in the burned districts spring up at once and give from very fair to mammoth crops, the first year after the fire showing that the soils is apparently uninjured. Vegetables and field crops generally give as good returns as though no fire had prevailed. A new years of cropping brings the lands

to apparently natural conditions as to its percentages of vegetable matter. While the fires of northern Wisconsin have caused losses almost beyond calculation, it is a fact that the opening up of that great region as a agricultural country has been hastened a generation thereby.

### **DESOLATION WROUGHT BY THE FOREST FIRES.**

One of the unfortunate effects of the forest fires has been to give the districts formerly covered by beautiful forests a most desolate appearance. In whatever county at the north the land seeker may go he will find giant trees still carrying their tops high in the air, but dead and without a leaf—killed by the fire. In many instances the trees have been converted by the fires into blackened “stubs” which stand like disfigured monuments telling of the death of the once glorious forest. But though the fire ruins every thing as it sweeps through the forest, nature soon converts up the wounds in the numerous seedling trees, weeds, briars, etc., which spring up on every hand. All of these things tend to give the burned districts of the north a gloomy, desolate appearance, and it is not surprising that many who have looked at these lands have come to regard them as worthless for farming purposes and to consider such a country unsuited for home making. That newcomers, especially women, should grow homesick at first when transferred from old settled regions to such districts as these is not in the least surprising.

### **NORTHERN WISCONSIN MISJUDGED BY THE TRAVELER.**

Persons visiting the north on trips of inspection are warned against making up their opinion of that region from what they may see from the car window, as they pass rapidly over the country on the trunk lines of railway. A prairie country viewed from the car window in midsummer is a most inspiring sight, and one is often led to believe it a veritable paradise. Crops can be seen for miles away on either hand and the unimproved land appear to be only awaiting the plow to bring additional wealth and prosperity. Our railroads at the north have been built almost without exception through swamp lands and along the water



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courses in order to secure easy grades; in consequence the traveler looking from his car window sees either swamps or the irregular broken lands of creek or river banks not at all adapted to the plow. Sparks from the locomotive have set fire a hundred times to the rubbish along the right of way and so ruined the forests adjacent to the track. The dead trees and "stubs" blackened by the fire rise out of the thick undergrowth which has sprung up on either side, and all of this adds to the unfavorable evidence. The prospector of lands, having selected points, should make his way to these regardless of what he has observed on his way thereto, and having reached his destination should proceed to inspect the country for many miles about. Often one does not have to leave

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View of a load of logs scaling 15,470 feet of lumber, board measure, taken on the head water of Black Creek, Chippewa county. This load of logs was drawn by four horses, about three miles. The load, with the sled, weighed not less 125,000 pounds, or more than sixty tons. The logging roads are constructed with down grades as much as possible, and the tracks for the sled runners are iced by sprinkling water upon, them. Delivered at the brink of the streams the logs are floated to the mills in the spring.

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the right of way of the railroad but fifty or a hundred rods to reach high lands which are smooth, or gently rolling, and bear evidence of high agricultural worth. Very frequently the burned and dead trees near the railway change a short distance away to rich, green forests still carrying thir full wealth of timber.

The homeseeker should remember that had northern Wisconsin been a prairie country it would long ago have been settled up and all the land in that region would now have been held at such prices that no person with limited means could hope to own a farm there. It is the desolation seen from the railway and the fears of homesickness that has frightened away timid land seekers in the past and so held the country back from settlement and

made it possible for one at the close of this century to secure a home on good farming lands in our rich, prosperous state for a sum that is merely nominal.

### **HEALTHFULNESS OF NORTHERN WISCONSIN.**

Many person are suspicious of diseases prevailing in new or partially settled countries. Northern Wisconsin is particularly fortunate in this regard, there being no disease which is peculiar or incident to that section and not known elsewhere. Ague is unknown, and the forests are healthful and invigorating as thousands of fishermen and hunters will testify. No special trouble comes to the settler when clearing up lands, and the good, pure, cold drinking water everywhere available guards against trouble in that direction. The Lake Superior country is visited each summer by thousands of persons suffering from asthma, hay fever and similar ailments, who find there perfect relief and who gain much strength and rest during their stay.

### **ABOUT INSECTS AND WILD ANIMALS.**

Of insect life there is nothing more serious than the mosquitoes of the forests and swamps, though at times these are serious enough. Mosquitos appear in these unfrequented districts about May 20th and disappear about July 20th; during that time these pests are often so numerous that persons cannot pass through the forests or swamps without carefully protecting their hands and faces. As the forest are cleared away, mosquitoes disappear so that they do not annoy more than elsewhere. There is a gnat, at the north commonly known as the "no-see-ums" (because they are so small that they are almost invisible), which lighting on one's hand or face gives a stinging bite, poisonous to many. These pests do not last long and do not annoy in all sections. The sand fly and the deer fly are two other pests which may annoy.

People who have lived at the west need not be told that there are no wild animals that will work harm to settlers in northern Wisconsin. The few bears and wolves which still inhabit the northern woods are harmless and show their greatest anxiety in getting out of

sight when approached by man. The most timid need not delay from coming to northern Wisconsin through fear of harm from any wild animal.

### **COMPARISON OF THE TIMBER REGION WITH THE PRAIRIE SECTIONS.**

Northern Wisconsin is almost unoccupied by farmers today because of the heavy forest which have heretofore covered the lands. Even now settlers are slow in coming into this country in comparison with its worth because they dread the very considerable labor necessary in clearing up a farm from the woods.

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View on the farm of Henry Whitney, Sherry, Wood county. Here we have a field very useful for pasture, but very unsatisfactory for crop cultivation. The great sprawling roots of the white pine stumps would long outlast the settler were it not for the stump machine. The white pine trees in northern Wisconsin generally grow in streaks or patches, most of the area being covered with hard wood. No pine trees grew on the higher lands of this farm where the buildings are located, and the hard wood stumps have disappeared.

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Let settlers, especially those with limited means, compare making a home in the woods with that on the prairies and they will find every factor in favor of the woods farming. The settler on the prairie must be satisfied with one crop a year and, we all know, this one crop even, is by no means certain. However anxious he may be for work, there is enforced idleness for six months, during which time about all that can be laid by in the other part of the year has been consumed. Our woods farmer can grow such crops as his cleared lands will permit in summer, and if those are not sufficient for his wants there is always employment for, the industrious in the winter time at wages to bring support to the family, and thus prevent the incurring of debt, which should be carefully avoided by all persons making a start on the farm.

The thoughtful settlers in northern Wisconsin will rejoice at the abundance of timber about him, well realizing that it is through its timber resources that this country offers an opportunity for sure and safe home building.

### **CHOOSING A LOCATION.**

As shown elsewhere there are still government lands in the state available for the homesteading and other lands are for sale by the state. As a rule both these classes are far distant from railway lines and other evidences of civilization. In most cases the settler will secure his lands from some private company or owner. It is strongly urged that in every case in securing a location for a home the settler should visit the locality in question and carefully inspect the lands offered, before paying out any money. Let it be understood the while there are many millions of acres of good farming lands in northern Wisconsin awaiting the coming of the settler, there are also other millions that are stony, hilly, swampy or carry but a poor soil; while no doubt a considerable portion of these poorer lands will some day be occupied there is no need of any one purchasing then at this time when those of high quality can be had at such reasonable figures. Let the better lands be chosen at this time, and leave the coming generation to solve the problem. What shall be done of those of a lower grade?

There are always person ready to take advantage of their fellowmen, and unfortunately it is not unreasonable to suppose that northern Wisconsin possesses some representatives of this class. The new-comer should remember this fact and keep his money safe in hand, entering into no contracts until he has seen the land he proposes to purchase and of his own knowledge is sure that the venture has in it all the elements of success.

The best way to ascertain the possible value of lands for farming purposes is to inspect the growing crops in fields and gardens lying as near as possible to the lands in question. There are now so many settlers in northern Wisconsin that the newcomer can in about every instance gain material help in this direction.

The wise settler will not locate in the midst of poor lands, no matter how good the lands he may think of holding may be. To own a good farm in the midst of poor, sterile lands or surrounded by swamps means living without neighbors or with those of low grade. A wise settler will locate where there are good lands all about him, for this means thrifty, prosperous neighbors, which in turn means good schools,

#### NUMBER OF INHABITANTS TO THE SQUARE MILE. BY COUNTIES. 1895

By Permission of Henry Casson, Secretary of State.

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churches and all the social advantages that flow from the possession of rich, fertile lands.

#### **LIMITED LAND PURCHASES.**

American farmers are quite commonly land poor; that is, they own more land than can be profitably farmed. Farming is a business which when rightly conducted requires considerable capital, and the settler should see to it that he purchases no more land than is absolutely needed to meet his wants for a few years to come. By making moderate purchases only he has less taxes to pay, and he can concentrate his efforts upon an area of such size that the best returns possible can be secured. When the first small tract has been duly conquered and converted into a first class farm, he can purchase a second one if desirable and so enlarge his domain. There is no more common mistake when purchasing land than to buy too much of it; let those locating in northern Wisconsin avoid this very common blunder.

#### **PRICES OF LANDS IN NORTHERN WISCONSIN.**

In some cases lands are given away by the counties which have come into possession of considerable tracts through the failure of former owners having removed the timber and neglected to pay taxes on them thereafter. These counties believing it better to let

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settlers have such lands and secure some taxes from them thereafter are offering in some instances to give away these lands; in other instances they are sold at low figures. Of course the lands which are given away must naturally be located some distance from good settlements and very often they are not of the highest quality, some of them indeed being of very low quality. Those settling on such lands must at first undergo hardships arising from the lack of roads, school accommodations, etc.

In general the prices of lands in northern Wisconsin range from two to seven dollars per acre for those without any improvements, the prices being dependent upon the local demand and other conditions. The prices above stated are for lands without any timber or marked value. Lands carrying timber available for lumber or furnishing hemlock bark command from five to fifteen dollars per acre. The latter figure covers the finest of hard wood or hemlock lands lying in close proximity to tanneries, saw mills and good railway towns.

In purchasing lands the settler is usually expected to pay one-fourth to one-third of the purchase price in the beginning, at which time he is given a contract for a deed. Deferred payments are made from one to five years later. In many of our northern counties parties who hold large tracts of land stand ready to allow settlers who are energetic and bound to get on in the world, to settle upon a forty acre tract without paying anything down at first but merely agreeing to improve the land and make a home on it. To such persons a contract is given that when he shall have paid for the land a deed will be given to him. Of course prices for lands will rise in the future, but for the present let the land seeker understand that if prices higher than are here mentioned are asked it is either because they possess unusual value, for reasons which will be evident to him on close examination or the parties are asking him too much for such offering. Unimproved lands are held in too great quantity to allow prices being materially advanced in the near future, and if the home-seeker suspects that parties are asking too much for land let him move on to some other locality where more reasonable offering will probably be made.

## **CLEARING LANDS.**

The cost of clearing lands at the north ranges from one dollar per acre to twenty-five. For the lowest figure one will find marsh lands which have been burned over, almost or quite ready for the plow. In other instances fire has burned through low lands killing the trees which, being uprooted by winds, have formed a tangled mass, almost wholly consumed by fire in dry times. Such low lands are often very rich and make first-class meadows and fields.

To clear an acre of land carrying heavy green timber requires an outlay of about twenty-five dollars for all expenses, but rarely need any such sum be expended because the saw logs and cord wood, one or both, will partially and in some cases completely pay for the clearing. In many instances the logs and cord wood pay for clearing the land, burning the rubbish, fencing the tract and sowing it to oats or grass seed. Lands on which the timber has been killed by the fire and rendered worthless but still standing my cost fifteen or twenty dollars to clear, providing the work is done without taking advantage of dry spells and the liberal use of fire. The prudent settler will clear his lands in such a way as to involve little or no direct outlay of money. This is done by taking advantage of dry times to burn up the rubbish on the ground, and working in the clearing when his time is not better paid for elsewhere. Some of our views give the reader a good idea of the great mass of material to be found on some of the tracts of land. There is no denying that the removal of this involves much labor, but advantage should be taken of dry times and the free use of fire, in which case one or two men can accomplish surprising results by well directed effort.

## **CONCERNING STUMPS.**

White pine stumps will probably stand a hundred years before they entirely rot and disappear if left to themselves. A very considerable part of the land in northern Wisconsin on which pine trees have grown is of excellent quality and the settler should not hesitate in securing such land because it has grown pine. An examination of the crops others are

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growing on such lands will settle their worth. After the pine stumps have stood a few years they can be quite rapidly removed by powerful stump pullers and, after removal, can be drawn together in heaps and burned.

Hard wood stumps do not last so long as pine stumps, and by seeding the land on which these stand to grasses and using it for a meadow a few years they do not seriously annoy. At the end of that period they can be destroyed by fire or pulled out by team or stump puller. The stumps, dead trees and the vast debris of the forests found at the north are a strange sight to persons from a prairie country. All of the better portions of Canada, Western New York, Ohio, Indiana and Michigan were once regions of the same character. Now they are among the most prosperous portions of our whole country.

### **THE STATE AND COUNTY BUREAUS OF IMMIGRATION.**

In this Hand Book we have drawn the attention of possible settlers to the northern part of our state, but 179 have not attempted to go into detailed descriptions of the various counties. Our last legislature provided for the establishment of a Bureau of Immigration, the purpose of which is to aid the settler in every way possible and through it he has the means of securing help which shall be fair and impartial and given without charge. Most of the northern counties are also establishing Boards of Immigration, and many of them are publishing pamphlets setting forth the agricultural advantages of their particular counties. The list of the officers of the State Board of Immigration and also the officers of the various county Boards of Immigration are given at the close of this Hand Book and our readers should not fail to correspond with some of these officers for more definite information.

### **CHURCH PRIVILEGES.**

All of the leading denominations of the Christian church have organizations and churches in the villages and cities of northern Wisconsin, and already a good many churches are observed by the traveler in the farming district. Persons desiring to locate where they may enjoy fellowship with some particular denomination can attain their desire through



correspondence with the county boards of immigration, or through information furnished by the officials of his own church.

### **ABOUT COLONIES.**

Northern Wisconsin offers especial advantages to settlers desiring to locate in colonies. Large tracts of land are held by railroad companies, lumber companies or other corporations and these may be secured on terms most favorable for dividing among a group of purchasers. Land seekers desiring to settle in colonies can find suitable locations in almost any of the northern counties, the exact section being determined by inspection, after correspondence with the Secretary of the State Board of Immigration or the members of the various county boards.

### **A WORD OF WARNING.**

The land seeker is again reminded that northern Wisconsin possesses areas of land which are of low fertility, while other tracts are swampy, and still others are thickly covered with drift boulders or thrown up into sharp gravelly ridges. Lands of this character should be carefully avoided by the home seeker.

Judging the future by the past we predict that unscrupulous persons taking advantage of the great interest in the lands of the north will purchase some of these poor tracts for a few cents per acre and through shrewd advertising and deceptive practices dispose of them to strangers at prices fully as high as they would have to pay for really valuable lands. Again we urge in the strongest terms possible that no one should purchase land in northern Wisconsin until it has been carefully inspected by himself or a trusted friend, and further that he should assure himself that the lands shown him are the same as those called for in the deed or contract he may secure. We have learned of cases where lands of very low fertility have been sold for many times their true value, and of other cases where the land seeker was shown one piece of land and sold another of far less value. All danger from these sources can be easily avoided by consulting with the Secretary of the

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State 180 Board of Immigration, the members of the various county boards whose names appear in this Hand Book, the county officers of the various counties, or other reliable and responsible parties easily found. County boards of immigration and county officers should at once advertise through the public press any efforts which may come to their knowledge tending to practice fraud or deceit on land seekers.

### **IN CONCLUSION.**

In this Hand Book we have set forth the agricultural advantages of our new north just as we found them in our inspection and study of that region, and believe those readers who have followed our statements and studied the views presented will agree with us, substantially, in the following conclusions:

Northern Wisconsin offers advantages well worthy of the careful consideration of people of limited means desirous of possessing a home on good farming lands. These lands are of low price in comparison to their worth at the present time, because of the common impression that this was a lumber country and not adapted to farming.

Clearing a farm from the woods means much hard labor, long continued, but there are many compensation in the abundant fuel supply, timber for buildings, and the woods for employment.

The crops that can be grown in northern Wisconsin are the same as those commonly found in the southern part of the state, excepting that corn does not thrive so well, while other crops, notably peas and timothy grass give larger returns than at the south.

The winters in northern Wisconsin are long and cold, but there are no blizzards and there is abundance of fuel for keeping warm and cheap material for the construction of farm buildings, while the yields of forage in summer are ample to maintain all live stock in prime condition during the winter. Market facilities at the north are not excelled anywhere in our country.

Because of the great development of trunk lines of railroads and the many cities developed through the lumber interest, the iron mines and commerce, the settlers in the farming districts of the north have less hardships before them than the pioneers of the wilderness in the past.

Northern Wisconsin today offers good agricultural lands at prices so low that no one need hesitate from the effort at securing a tract providing he works diligently and intelligently to the end.

Northern Wisconsin has nothing to offer would-be bonanza farmers who are always about to become rich but never quite succeed, while it has millions of acres for small land owners whose well directed efforts are the guaranty of a competence and whose accumulations of property are enormous in the aggregate.

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### **Sources of Information Helpful to the Home Seeker.**

The legislature of 1895 established a State Board of Immigration, the officers of which are given below. In compliance with the request by the Secretary of the State Board, the various counties below named have established immigration committees as here given, the appointments generally being made by the county board of supervisors.

### **HOW TO GAIN INFORMATION ABOUT ANY PARTICULAR COUNTY.**

Any person who may have become interested in northern Wisconsin through this Hand Book or otherwise, desiring more definite information concerning particular counties may gain the same by writing either to the Secretary of the State Board of Immigration or to the representatives of the several counties as given below. Many of these counties have prepared hand books, pamphlets or circulars describing in detail the particular

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opportunities and advantages they have to offer the home seeker. A postal card or letter will bring this information.

Whenever a person wishes to inspect any portion of the north, he should write in advance of his visit to some member of the immigration committee in the district he proposes to inspect, and by making arrangements in advance can secure many opportunities for inspection which would not be available to him were he to go without such notice. The purchase of land for a home is a matter of the highest import to any one, and all efforts in this direction should be carefully and judiciously made. Wisconsin has now set in motion the machinery which will enable any one to secure good locations, avoiding mistakes or fraud if he will only avail himself of the advantages offered.

### **SOURCES OF INFORMATION CONCERNING WISCONSIN LANDS AVAILABLE TO THE HOMESEAKER.**

#### **STATE BOARD OF IMMIGRATION.**

Hon. Wm. H. Upham, Governor, Madison, Wis.

Hon. Henry Casson, Secretary of State, Madison, Wis.

H. L. Beese, Butternut, Ashland County, Wis.

James J. Nelson, Amherst, Portage County, Wis.

Ole Larson, Osceola, Polk County, Wis.

George W. Bishop, Secretary, Rhinelander, Wis.

#### **COUNTY IMMIGRATION COMMITTEES.**

Adams —C. M. Simons, Friendship; S. W. Pierce, Friendship.

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Ashland —M. J. Hart, Ashland; A. Marth, Butternut; M. G. McGeehan, Highbridge.

Barron —F. F. Morgan, Cumberland; John H. Bunker, Turtle Lake; N. M. Rockman, Barron.

Bayfield —W. W. Downs, Bayfield; W. H. Irish, Washburn; J. G. Riggs, Drummond; Byron, Ripley, Iron River; Alex. Welcome, Mason.

Washburn Town Board of Immigration—W. H. Irish, President, Washburn; J. E. Jones, Secretary, Washburn; Fred. T. Yates, Treasurer, Washburn.

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Buffalo —Geo, Kindschy, Montana; J. F. Butler, Nelson; Chas. Van Brunt, Misha Mokwa; Halvor Lee, Modena; J. W. Whelan, Mondovi.

Burnett —Anton Erickson, Grantsburg; August Cassel, Wood Lake; Ole C. Bransted, Grantsburg.

Chippewa —M. P. Chippewa Falls; Warner Flint, Estella; L. Labarge, Warner; John Tyman, Bruce; L. G. Moon, Stanley.

Clark —C. A. Youmans, Chas. Burpee, Neillsville; J. L. Sullivan, Nevins.

Door —G. W. Allen, Chas. M. Whiteside, F. R. Stradling, Sturgeon Bay.

Douglas —Kirby Thomas, Secretary, James H. Agen, W. H. Webb, President, M. Kommers, Superior; Chas, Howard, Brule.

Dunn —E. J. Newsom, R. J. Flint, A. P. Davis, Menomonie; Wm. H. Smith, Eau Galle; T. J. George, Prairie Farm.

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Eau Claire —R. C. Hine, Fairchild; S. Barber, Augusta; E. M. Bartlett, Eau Claire; Wash Churchill, Porter's Mills; Peter McDonald, Hadleyville.

Florence —O. C. Davidson, Commonwealth; S. T. Beattle, Florence; J. E. Parry, Florence; Pat Burns, Florence.

Forest —John E. Anderson, North Crandon; Wm. Bonack, Three Lakes; John E. Rice, Pratt Junction; S. Shaw, Crandon; F. S. Campbell, Three Lakes.

Iron —W. S. Reynolds, Hurley; W. H. Bridgman, Hurley.

Jackson —A Erickson, Black River Falls; M. Cannon, Merrillan; J. A. Mills, Millston.

Juneau —J. D. Haring, Armenia; John Scanlon, Lyndon Station; Chas Bell, Wonewoe; J. J. Rose, Mauston; L. P. Lawrence, Mauston.

Kewaunee —Frank McDonald, Ahnapee; M. Ley, Luxemburgh; Joseph Debecker, Red River; John M. Borgman, Kewaunee.

Langlade —A. M. Millard, Antigo; James Quinn, Antigo; J. Cummings, Dudley.

Lincoln —Herman Rusch, H. R. Fehland, Martin Foss, Joseph Downey, Merrill; N. Emerson, Tomahawk.

Marathon —C. B. Dopp, Wausau; Carl Kronenwetter, Mosinee; John A. Lemmer, Marathon City.

Marinette —W. A. Brown, A. J. Van Cleave, Geo W. Taylor, Marinette.

Oconto —Angus McAllister, Oconto; A. C. Frost, Mountain; A. Rifenberg, Abrams.

Oneida —A. W. Brown, E. B. Crofoot, J. C. Curran, Rhinelander.

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Pepin —Andrew Rohrsheib, East Pepin; Fred Knsack, Porcupine; Henry Hogue, Pepin.

Polk —M. C. Peterson, West Denmark; T. F. Monte, Wolf Creek; Gust. Paulson, Richardson; Peter Tollefson, Star Prairie; Ole Larson, Osceola.

Portage —Henry Wallace, Stevens Point; Frank J. Pratt, Plainfield; A. M. Nelson, Amherst.

Price —Julius Kœhler, Phillips; O. A. Johnson, Ogema; Gavin Davie, Fifiel; H. J. Soetebeer, Phillips; J. F. Gorman, Kennan; J. D. Rowland, Phillips; J. W. Emerson, Prentice.

Sawyer —R. L. McCormick, John Erickson, Matt Ford, John E. Moreland, Wm. Powers, Hayward.

Shawano —Chas. Sumnicht, Bonduel; F. E. Porter, Birnamwood; Ole Severson, Frazor.

St. Croix —H. Borshenius, Baldwin; J. A. Wilson, Wilson; W. P. Freeman, New Richmond; J. E. Shirk, Glenwood.

Taylor —J. B. Ramsey, A. J. Perkins, C. B. Powell, Jacob Shipiro, Medford; D. McLennan, Rib Lake.

Trempealeau —John O. Melby, Whitehall; A. A. Arnold, Galesville; M. English, Arcadia.

Vilas —O. B. Moon, L. J. Cook, James Morgan, Eagle River

Washburn —Josiah Bond, Jr., Minong; G. E. Crocker, Spooner; A. Ryan, D. A. Stouffer, Shell Lake; R. E. McKee, Mills.

Waupaca —W. R. Binkelman, Marion; H. W. Anthes, Clintonville; Thos. Thorsen, Scandinavia; Ole R. Oleson, Waupaca; Aug. H. Pape, New London.

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Waushara —S. Bardwell, Plainfield; G. Tennant, Wautoma; C. A. Davenport, Auroraville.

Wood —George H. Smith, Sherry; Geo. L. Williams, Grand Rapids; F. A. Cady, Marshfield; P. N. Christensen, Bakerville; W. H. Bowden, Babcock; T. A. Taylor, Secretary, Grand Rapids.

Northern Wisconsin Immigration and Improvement Association. J. H. Petherbridge, Secretary, Eau Claire, Wis.

### **RAILROAD OFFICIALS WHO WILL FURNISH PAMPHLETS, MAPS AND OTHER INFORMATION CONCERNING LANDS, ON APPLICATION.**

C. E. Simmons, Land Commissioner, C. & N. W. Ry. Co., Chicago, Ill.

C. S. Pierce, Gen'l Land Agt. for Wis., C. & N. W. Ry. Co., Milwaukee, Wis.

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Geo. H. Heafford, Gen'l Pass. Agt. C., M. & St. P. Ry. Co., Chicago, Ill.

W. E. Powell, Gen. Immigration Agt. C., M. & St. P. Ry. Co., Chicago, Ill.

Frederick Abbot, Land Commissioner Wis. Central Ry. Co., Milwaukee, Wis.

T. I. Hurd, Land & Industrial Agt. "Soo" Line, Minneapolis, Minn.

Geo. W. Bell, Acting Land Commissioner, C., St. P., M. & O. Ry., Hudson, Wis.

E. W. MacPherran, Land Commissioner D. S. S. & A. Ry., Marquette, Mich.

Hopewell Clark, Land Commissioner St. P. & D. Ry, St. Paul, Minch.

J. B. Last, Gen'l Pass, Agt. G. B., W. & St. P. Ry., Green Bay.



E. Decker, Pres't A. & W. Ry., Ahnapee.

**PUBLICATION GIVING INFORMATION TO THE HOME SEEKER, COPIES OF WHICH  
WILL BE FURNISHED ON APPLICATION.**

The New Wisconsin, Judge H. S. Comstock, Editor, Cumberland, Wis.

The New North Wisconsin, J. H. Petherbridge, Editor Eau Claire, Wis.

Ingram block, Eau Claire, Eau Claire county: home of the public library.

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**Statistic Concerning the Agricultural Resources and Productions of Wisconsin.**

From the Census Report of 1895 by permission of Henry Casson, Secretary of State.

Countries. Total population. Number of farms. Number acres improved. Value of farms.  
Value of agricultural products Horses and Mules. Cattle and Calves on Hand. Sheep and  
Lambs on Hand. Number. Value. Number. Value. Number. Value. Adams. 7,532 1,393  
89,739 \$2,118,075 \$796,734 4,119 \$182,815 9,381 \$122,719 9,384 836,141 Ashland  
17,241 397 8,074 334,799 140,827 455 97,215 1,208 22,275 368 1,109 Barron 20,122  
2,326 79,260 2,528,037 986,546 4,724 267,100 11,169 166,709 12,391 20,055 Bayfield  
12,595 218 2,653 63,395 103,029 3,063 77,055 432 9,810 4 14 Brown 45,623 3,620  
137,030 6,358,096 1,926,239 8,452 306,665 22,356 252,289 10,481 17,519 Buffalo  
16,931 2,226 158,950 4,529,509 2,155,682 9,449 350,012 29,381 245,269 19,230 33,777  
Burnett 5,892 768 20,508 890,400 320,029 1,257 73,742 5,065 60,979 2,124 3,530  
Calumet 17,744 1,995 120,899 7,664,600 2,095,921 6,858 288,408 23,276 319,885  
11,428 19,712 Chippewa 28,727 2,202 131,007 3,458,825 1,609,156 6,991 387,183  
11,563 115,563 155,934 10,861 20,301 Clark 21,342 2,560 82,370 3,966,644 1,538,333  
6,432 325,169 18,876 240,835 19,413 35,680 Columbia 30,865 3,068 377,404 14,374,032  
4,447,325 14,591 551,558 40,345 507,956 71,017 96,366 Crawford 17,203, 2,024  
121,091 8,271,195 1,590,062 7,742 234,800 19,605 224,861 20,069 37,464 Dane 65,669  
5,842 482,376 29,132,619 8,759,744 25,758 933,966 82,212 1,217,909 52,386 105,950  
Dodge 47,851 4,878 369,942 28,681,650 6,884,413 17,617 725,776 63,932 954,851  
48,195 74,948 Door 16,669 2,103 91,591 2,890,435 1,088,959 4,579 204,873 14,671

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153,244 11,107 18,075 Douglas 29,986 203 3,516 204,750 64,752 385 27,275 393 10,232  
31 75 Dunn 25,006 2,846 175,886 4,778,028 1,938,679 3,327 388,474 21,143 247,079  
26,186 42,449 Eau Claire 33,172 1,870 142,181 3,822,950 1,545,256 7,074 325,898  
12,651 160,667 8,940 15,061 Florence 2,830 137 2,326 76,865 39,705 289 15,510 145  
2,289 73 200 Fond du Lac 47,436 4,299 286,911 21,860,880 5,766,740 16,175 699,084  
51,003 148,049 88,868 133,075 Forest 1,288 95 1,414 38,130 32,302 121 7,515 237  
3,386 10 11 Grant 38,372 3,960 887,736 14,935,319 5,550,437 25,144 620,549 61,986  
887,708 24,540 57,166 Green 29,420 2,407 262,736 13,674,001 4,995,449 13,276  
421,505 51,178 963,494 28,512 54,078 Green Lake 15,989 1,440 120,257 6,808,877  
1,874,553 6,526 317,136 15,512 224,413 45,148 52,203 Iowa 23,447 2,781 274,473  
10,118,192 3,969,106 15,109 836,681 57,249 832,502 20,148 44,944 Iron 5,388 83 2,287  
33,340 33,332 119 12,405 191 3,880 18 35 Jackson 16,722 2,028 124,503 3,208,406  
1,425,340 6,395 280,542 16,064 176,977 11,321 19,277 Jefferson 36,317 3,314 199,537  
19,695,670 4,353,506 10,628 421,181 45,450 749,362 15,075 30,134 Juneau 18,754  
1,977 117,612 3,454,786 1,344,263 6,502 241,467 20,256 181,772 12,119 20,323  
Kenosha 17,548 1,210 137,729 7,416,043 1,961,288 6,187 238,917 20,186 390,883  
26,085 33,413 Kewaunee 17,632 2,120 119,446 3,514,052 1,330,987 5,906 197,883  
18,372 170,120 10,234 15,511 La Crosse 43,610 1,659 130,680 5,869,975 1,847,010  
5,990 233,490 17,070 224,541 9,746 17,629 Lafayette 21,488 2,370 286,054 12,848,148  
4,551,702 18,514 386,152 48,458 800,438 19,398 51,312 Langlade 11,092 825 20,482  
790,940 378,341 1,466 103,403 4,845 66,391 848 2,095 185 Lincoln 14,765 439 9,257  
\$433,527 \$172,318 843 \$16,080 1,955 \$26,511 1,094 \$2,237 Manitowoc 40,802 4,017  
205,206 12,408,450 3,025,216 11,116 468,148 38,168 426,360 15,371 26,701 Marathon  
36,593 3,143 103,543 14,251,880 1,684,898 7,002 389,193 22,461 243,358 18,571  
31,265 Marinette 27,271 954 29,302 2,177,875 480,440 2,104 89,878 5,019 56,064  
1,019 1,671 Marquette 10,263 1,450 33,311 2,558,674 1,011,701 4,902 161,834 13,702  
133,447 23,361 38,241 Milwaukee 287,922 1,668 67,909 17,466,960 2,126,392 5,747  
356,058 10,108 222,117 955 3,188 Monroe 26,350 3,265 181,674 5,920,290 2,299,881  
10,551 379,712 27,728 343,490 31,949 54,634 Oconto 18,339 1,651 58,096 2,549,879  
964,375 4,831 226,056 11,374 133,160 5,081 10,249 Oneida 7,060 63 1,395 80,895  
26,845 189 15,630 217 4,870 Outagamie 44,404 3,096 160,963 9,776,755 3,090,778  
9,099 436,972 33,686 478,656 19,533 38,512 Osaukee 16,545 1,668 111,632 9,132,196  
2,009,631 5,536 261,201 18,573 338,976 2,382 5,906 Pepin 7,507 990 54,558 1,374,210  
604,459 2,833 119,945 5,686 65,254 5,340 9,595 Pierce 23,040 3,081 158,848 5,870,720  
2,301,109 9,654 427,199 22,592 238,680 32,558 52,821 Polk 16,117 2,454 83,239  
2,921,691 1,120,494 6,242 255,673 16,493 198,638 12,298 20,152 Portage 28,531 2,779

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142,456 5,304,391 1,658,963 7,305 381,086 10,969 126,722 7,897 12,635 Price 7,257  
610 7,690 412,993 149,845 585 41,635 1,674 33,010 133 321 Racine 41,110 2,223  
142,650 11,492,350 2,716,461 8,401 408,433 19,127 405,081 20,8514 34,572 Richland  
19,619 2,818 163,109 5,475,712 2,404,870 9,754 346,563 26,571 354,764 68,814 93,965  
Rock 48,414 4,057 351,753 19,625,967 5,595,268 19,618 820,452 44,839 776,258  
32,279 67,638 St. Croix 25,870 2,891 228,508 6,888,201 1,984,154 8,826 401,718 19,423  
252,551 16,360 27,643 Sauk 32,919 3,775 238,485 10,298,815 3,515,550 12,238 463,042  
41,946 486,760 38,574 73,201 Sawyer 3,741 91 3,166 344,070 94,179 494 31,775 544  
17,542 20 60 Shawano 22,573 2,720 94,313 4,305,090 1,574,964 5,857 299,422 23,502  
239,191 18,908 31,011 Sheboygan 48,396 3,059 206,065 14,148,941 3,903,064 10,579  
475,188 38,287 594,323 12,477 23,806 Taylor 8,498 881 15,505 705,520 285,261 1,243  
80,462 3,280 43,286 908 1,908 Trempealeau 21,963 2,912 217,869 5,944,813 2,959,978  
9,338 467,955 32,304 412,800 25,191 45,123 Vernon 27,035 3,716 223,701 6,811,408  
2,898,710 13,161 428,403 30,678 390,,127 55,700 90,445 Vilas 3,801 10 56 13,011 29  
1,690 48 1,570 Walworth 29,162 2,728 238,217 15,779,312 5,513,692 14,596 524,157  
44,669 916,091 39,952 62,407 Washburn 4,266 189 5,079 170,785 64,507 535 26,945  
571 8,744 206 500 Washington 24,077 3,058 172,362 13,725,145 3,091,215 9,325  
409,890 25,562 359,951 24,610 48,786 Waukesha 36,562 3,334 216,672 21,224,330  
4,081,317 12,676 598,848 29,845 528,204 60,996 108,138 Waupeca 30,798 3,198  
154,973 7,379,140 2,702,031 9,314 489,982 24,213 317,556 23,516 43,562 Waushara  
15,355 2,452 162,471 5,165,063 1,970,632 7,725 357,508 16,735 249,592 21,398 34,561  
Winnebago 57,627 2,480 180,038 10,314,641 3,901,712 10,458 507,854 28,718 423,888  
32,645 54,893 Wood 21,637 1.694 53,471 2,391,130 699,769 3,671 170,416 10,039  
111,577 6,203 9,913 Total 1,937,915 150,,801 9,446,410 \$488,754,021 \$149,690,087  
525,871 \$21,698,691 1,510,788 \$21,458,627 1,321,544 \$2,243,877 186

### Statistics Concerning Agricultural Production of Wisconsin—

Counties Hogs Slaughtered. Milch Cows 2 Years Old and Over. Cheese Factories.  
Creameries. Cheese. Butteh. Number. Value. Number. Value. Number. Value. Number.  
Value. Pounds Value. Pounds. Value. Adams 4,524 \$42.91- 4,406 \$87,599 3 \$1,800 1  
\$1,000 39,430 33,170 414,491 \$60,270 Ashland 315 3,198 904 18,722 64,627 10,396  
Barron 3,087 29,325 5,795 123,911 1 1,000 2 5,500 18,270 1,714 528,125 72,834  
Bayfield 43 370 576 16,843 Brown 8,380 73,786 13,338 218,027 21 11,910 4 3,300  
959,314 75,817 870,047 118,787 Buffalo 25,898 185,727 12,122 204,636 12 7,910  
7 9,050 221,345 16,631 870,682 100,013 Burnett 485 4,830 2,286 39,206 4,030 850  
218,913 28,025 Calumet 10,358 92,914 13,623 275,771 37 24,825 4 14,500 1,766,766

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124,322 866,973 131,159 Chippewa 9,267 89,436 7,143 144,907 5 8,550 3 2,500 37,832  
3,333 899,126 119,620 Clark 6,017 60,354 8,048 168,472 7 7,000 8 14,375 29,804  
2,681 946,103 128,836 Columbia 43,651 434,919 17,638 347,492 9 10,230 24 43,025  
132,796 10,322 1,997,237 304,605 Crawford 20,122 170,574 8,387 165,584 1 400 6  
17,400 900 65 741,217 87,879 Dane 96,123 941,663 48,930 986,644 53 26,000 54  
130,250 1,449,026 81,585 5,521,838 892,106 Dodge 43,765 393,910 41,608 841,650  
165 139,651 112 71,363 5,980,125 487,404 2,899,132 467,432 Door 4,278 43,034 8,413  
137,595 35 12,790 1 1,000 482,355 45,889 485,870 70,355 Douglas 243 2,400 218 5,946  
21,465 4,303 Dunn 16,234 151,283 9,758 170,634 5 4,550 5 7,610 44,935 4,223 989,387  
138,377 Eau Claire 10,447 58,591 8,115 157,423 1 600 4 4,500 31,350 2,524 802,547  
137,252 Florence 2 25 346 8,468 41,770 8,072 Fond du Lac 41,759 331,409 30,366  
570,526 66 43,100 41 104,000 2,823,877 209,186 2,812,369 480,758 Forest 78 743 170  
2,705 5,430 1,257 Grant 78,829 744,826 26,525 574,119 20 19,600 26 61,825 600,262  
47,876 2,484,484 349,693 Green 47,650 476,502 31,573 771,836 185 93,075 24 55,600  
7,796,249 639,221 1,157,680 213,940 Green Lake 19,431 150,886 8,393 182,739 8 8,800  
9 17,700 780,565 115,766 Iowa 43,870 419,785 24,091 482,745 63 52,350 19 29,905  
2,139,647 177,387 1,379,341 233,265 Iron 119 1,270 390 13,887 9,955 2,156 Jackson  
8,710 77,836 9,435 151,102 2 2,400 3 5,100 13,506 1,422 974,445 146,245 Jefferson  
35,708 325,542 31,586 620,586 690,166 17½ 25,500 59½ 181,800 1,060,101 54,952  
3,683,373 732,605 Juneau 9,404 76,904 8,224 149,201 14 12,550 2 4,000 414,135  
29,684 651,570 97,536 Kenosha 12,024 113,170 13,050 326,726 15 39,900 17,900  
1,075 1,460,850 299,686 Kewaunee 6,092 60,126 12,972 180,470 58 19,103 1 1,000  
1,407,081 117,315 570,924 76,749 La Crosse 16,693 156,012 11,757 244,448 3 2,200  
8 10,700 30,689 4,571 1,214,123 308,268 Lafayette 60,175 543,558 22,474 510,001 48  
37,760 24 78,700 1,201,266 102,137 2,016,629 319,138 Langlade 1,347 12,915 1,806  
39,728 2 700 5,891 489 190,241 30,781 Lincoln 311 3,369 1,317 25,691 50 5 83,193  
14,508 Manitowoe 12,219 114,095 28,955 359,377 79 57,445 21 51,100 3,315,920  
254,700 1,257,470 208,885 187 Marathon 8,027 \$73,799 9,997 \$165,505 10 \$4,700 6  
\$5,400 51,114 \$3,184 \$718,075 \$88,909 Marinette 1,749 17,281 2,977 53,744 2 750 1  
25 179,170 32,325 Marquette 8,752 79,614 5,399 87,070 5 4,500 100 10 424,023 49,790  
Milwaukee 4,939 55,611 8,841 218,460 1 25 40,000 3,970 124,212 169,999 Monroe  
18,281 158,654 12,903 254,990 7 3,800 12 23,450 78,780 7,311 1,325,918 191,061  
Oconto 4,068 36,866 4,919 89,299 3 1,700 5 12,014 5,000 500 502,052 82,034 Oneida  
42 425 124 3,205 2,850 712 Outagamie 22,961 208,327 19,958 401,788 60 47,887 12  
37,200 3,121,836 237,800 1,145,695 173,411 Ozaukee 8,505 82,156 11,597 269,722  
32 21,000 6 7,950 1,241,839 98,122 815,184 142,501 Pepin 6,585 56,181 3,275 55,784

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1 666 3 8,000 210 19 319,658 44,944 Pierce 13,307 115,971 9,421 169,368 8 2,900  
4 9,700 101,895 8,844 1,042,676 168,813 Polk 4,672 43,339 7,988 141,583 1 300 6  
8,825 27,982 2,476 769,440 106,019 Portage 8,666 80,702 7,632 138,853 2 950 48,850  
3,600 641,652 99,138 Price 261 2,712 942 28,915 1 40 102,424 12,544 Racine 14,447  
137,434 14,342 385,671 2 6,503 11 37,100 1,422,916 286,233 Richland 24,031 285,424  
13,273 279,618 20 22,425 5 6,700 1,877,625 113,702 1,024,153 140,956 Rock 56,493  
566,726 21,422 717,871 12 16,700 27 68,525 289,688 23,246 2,907,649 544,592 St.  
Croix 9,019 78,590 10,540 185,791 7 2,275 14 31,200 10,380 4,930 891,796 133,649  
Sauk 44,780 424,839 19,008 836,982 16 11,200 14 18,045 633,531 49,483 1,678,800  
249,344 Sawyer 323 4,881 260 7,244 17,155 4,503 Shawano 12,563 105,881 10,126  
173,746 14 4,805 4 5,000 279,671 17,647 624,274 81,746 Sheboygan 19,935 184,048  
29,222 623,515 103 83,400 11 12,550 6,949,379 556,540 961,959 167,450 Taylor 1,004  
9,411 304 7,663 800 80 161,361 22,916 Trempealeau 18,879 169,771 17,389 932,647  
12 25,300 1,880 106 2,858,027 462,396 Vernon 29,329 268,982 18,368 263,781 5 3,200  
7 13,500 6,425 497 1,484,774 191,930 Vilas 76 2,620 Walworth 45,467 430,055 28,243  
765,769 10 22,950 39 116,900 875,906 63,228 5,089,419 1,019,845 Washburn 60 594  
602 9,765 37,690 6,595 Washington 17,406 160,213 17,346 350,159 25 24,150 9 22,200  
1,088,019 71,142 1,249,553 213,153 Waukesha 23,642 200,934 21,061 490,417 3 9,650  
27 65,930 194,561 73,133 2,292,871 433,177 Waupaca 13,961 125,444 12,730 256,296  
16 10,950 3 5,450 692,441 42,167 1,185,164 176,364 Waushara 12,058 2,122,250 10,598  
207,560 16 18,000 6 18,800 1,190,281 85,962 767,684 104,823 Winnebago 28,192  
351,620 16,040 341,839 40 26,400 13 19,275 1,590,586 126,769 1,219,560 210,080  
Wood 2,482 23,489 6,271 111,480 11 6,200 8 8,000 57,095 4,600 358,206 47,069 Total  
1,182,591 \$10,908,035 842,039 \$17,442.144 1,837 \$974,811 753 \$1,557,807 52,480,815  
\$3,984,103 74,638,730 \$12,310,373 188

### Statistics concerning Agriculture Production of Wisconsin—

Counties. Wheat. Corn. Oats. Rye. Acres. Bushels. Value. Acres. Bushels. Value. Acres.  
Bushels. Value. Bushels. Value. Adams 1,242 15,397 \$7,649 13,038 90,575 \$39,186  
9,111 181,719 \$52,548 118,565 \$51,353 Ashland 20 298 204 5 85 46 526 10,065 3,759  
4,897 1,220 Barron 2,715 32,890 17,621 2,215 3/4 35,133 15,765 12,062 192,250  
56,064 31,220 12,653 Bayfield 21 375 147 64 1,545 462 Brown 10,032 140,679 66,063  
1,946 62,262 24,992 39,462 1,105,525 329,715 90,012 38,817 Buffalo 27,979 534,183  
247,379 20,409 338,480 132,380 41,428 1,217,421 338,650 36,773 15,852 Burnett  
1,102 10,885 5,772 1,250 24,461 10,821 2,179 30,347 9,361 15,636 7,689 Calumet  
11,339 221,893 112,158 4,181 123,241 53,910 19,796 703,208 207,662 17,416 8,604

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Chippewa 3,269 38,383 18,521 8,679 97,475 43,834 39,919 780,428 208,752 91,126  
33,721 Clark 2,420 47,215 25,294 2,449 60,949 26,684 14,516 428,952 122,004 71,104  
39,014 Columbia 10,145 182,155 98,208 46,013 1,314,903 458,593 68,696 2,469,235  
640,206 125,063 56,282 Crawford 8,082 129,992 62,318 20,558 348,134 140,272 31,158  
890,323 223,562 39,857 16,938 Dane 14,369 299,814 146,132 94,893 2,681,546 992,278  
114,664 4,356,421 1,110,517 50,277 21,430 Dodge 19,643 445,613 223,559 32,420  
1,153,975 353,193 51,308 2,229,831 608,236 68,972 91,452 Door 8,271 121,566 67,318  
975 25,740 11,706 12,234 256,632 74,836 72,426 21,867 Douglas 5 115 82 17 537  
274 41 736 264 73 36 Dunn 6,810 111,701 55,157 27,924 341,026 118,914 444,250  
1,034,063 252,342 155,573 62,151 Eau Claire 8,115 111,412 58,822 12,677 159,785  
68,568 79,870 824,937 223,205 115,842 47,691 Florence ½ 15 \* 53 941 359 Fond du  
Lac 14,634 321,263 161,442 25,530 747,796 277,238 70,840 2,812,538 724,694 18,724  
4,783 Forest 24 560 327 19 610 287 324 11,198 3,857 123 58 Grant 6,599 102,760  
53,512 85,871 1,414,037 589,573 94,280 3,030,425 807,051 94,255 46,695 Green 1,785  
36,932 18,894 54,692 1,510,516 647,635 45,733 1,684,756 463,633 59,613 26,960  
Green Lake 9,183 151,647 73,570 19,690 387,159 141,824 29,374 950,239 278,888  
54,440 21,278 Iowa 5,023 85,244 40,320 37,292 675,858 312,753 61,283 2,073,701  
520,877 68,696 27,593 Iron 3 29 18 10 235 125 48 735 283 Jackson 7,475 172,361  
82,242 10,987 164,242 59,459 37,865 1,019,245 263,573 64,880 25,929 Jefferson 9,159  
222,114 110,739 90,789 1,049,620 404,946 333,926 1,369,369 375,948 115,675 51,286  
Juneau 3,589 61,401 31,901 12,080 150,994 63,209 28,181 800,903 195,575 53,041  
22,673 Kenosha 541 9,241 4,931 15,388 418,815 149,090 19,980 738,658 211,915 8,081  
4,081 Kewaunee 11,178 154,250 82,049 172 5,828 2,899 16,888 416,920 117,757 96,761  
42,474 La Crosse 7,617 145,300 67,449 16,794 352,569 138,417 27,670 844,834 217,757  
55,380 21,991 Lafayette 248 12,007 6,380 64,203 1,618,260 704,462 64,157 2,078,266  
577,900 26,914 12,562 Langlade 208 3,884 2,229 163 9,700 3,290 2,810 64,015 22,342  
10,789 5,147 Lincoln 147 2,498 1,347 35 875 466 1,609 30,551 11,379 5,226 2,744  
Manitowoe 17,815 295,070 147,002 727 13,746 6,694 36,043 959,909 304,413 185,395  
36,448 189 Marathon 4,643 63,662 \$31,626 1,083 39,125 \$12,836 22,208 447,344  
\$135,704 89,123 \$39,973 Marinette 706 12,701 6,557 818 29,130 7,975 5,072 135,256  
38,000 7,158 3,556 Marquette 2,596 29,988 17,015 15,658 218,158 84,041 11,795  
274,915 79,451 174,392 76,457 Milwaukee 1,388 27,888 14,965 4,567 166,875 67,872  
14,177 587,859 176,728 47,591 23,913 Monroe 16,951 313,443 145,531 17,808 220,369  
88,059 38,097 1,263,752 303,058 79,526 28,914 Oconto 3,896 68,082 83,888 2,075  
65,404 25,503 13,494 394,128 114,087 28,470 12,722 Oneida 2 ‡ ‡ 48 50 30 194 ‡ ‡ ‡ ‡  
Outagamie 15,914 331,056 153,085 13,534 513,282 195,536 38,876 1,430,502 392,170



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37,750 18,577 Osaukee 4,783 87,784 43,373 2,896 79,000 32,333 16,117 516,971  
 157,222 56,308 28,770 Pepin 4,854 81,828 39,922 7,945 69,792 29,964 9,501 226,549  
 61,784 30,134 13,142 Pleme 16,472 280,044 142,807 14,471 292,351 108,071 29,788  
 922,082 244,197 190,303 79,602 Polie 9,098 21,332 16,831 4,459 55,222 19,395 339,123  
 91,107 91,107 71,174 29,149 Portage 1,246 14,933 7,740 12,732 306,815 102,325  
 25,098 378,134 112,617 159,630 67,864 Price 1 10 5 18 655 331 182 2,945 1,207 788  
 520 Racibe 1,523 24,883 12,790 15,900 636,559 211,275 26,726 1,071,583 312,576  
 26,349 12,945 Richland 14,446 231,080 113,487 32,487 626,754 258,055 25,146 806,667  
 200,727 31,573 14,008 Rock 2,171 41,581 20,758 76,032 2,053,883 815,011 61,617  
 2,085,697 576,265 108,051 52,422 St. Croix 15,527 164,744 89,297 9,230 101,801  
 42,495 88,804 1,530,707 432,042 153,851 62,022 Sauk 22,485 428,379 203,780 35,531  
 562,508 213,777 53,125 1,745,026 429,642 103,835 45,946 Sawyer 9 376 227 183 3,450  
 1,215 50 37 Shawano 11,987 279,825 127,732 5,374 143,337 62,293 21,565 634,197  
 168,844 73,375 31,549 Sheboygan 11,408 245,561 123,937 9,878 274,930 95,982 31,580  
 1,103,477 325,956 125,963 61,878 Taylor 30 481 276 38 1,549 703 805 16,760 6,179  
 6,731 3,712 Trempealeau 12,365 247,587 126,446 15,534 265,793 119,326 64,900  
 1,933,331 510,287 72,240 81,338 Vernon 19,211 372,772 163,000 29,106 507,060  
 206,673 57,527 1,876,674 448,494 31,051 12,911 Vilas 4 1/3 10 5 76 ‡ ‡ ‡ ‡ Walworth  
 3,029 55,298 28,657 45,784 2,086,164 587,500 40,759 1,677,997 441,785 25,344 12,652  
 Washburn 10 78 45 133 2,040 939 169 1,275 526 642 266 Washington 12,631 263,251  
 146,017 12,537 378,829 112,350 26,212 845,703 246,806 81,838 41,706 Waukesha  
 7,267 141,155 71,789 21,795 560,401 175,680 37,026 1,402,640 416,234 82,031 36,150  
 Waupaca 10,141 210,560 104,422 10,995 315,817 116,423 27,840 811,850 213,640  
 103,750 46,359 Waushara 2,856 37,655 18,904 18,793 325,857 153,506 20,076 374,404  
 121,032 126,881 58,902 Winnebago 9,543 180,247 87,892 16,823 438,679 183,898  
 38,378 1,447,788 421,183 31,198 13,693 Wood 884 16,456 8,117 2,148 28,094 9,377  
 6,451 154,745 43,233 55,558 24,022 Total 471,163 8,565,071 \$1,223,728 1,118,902  
 1/3 26,694,488 \$10,129,169 2,025,278 61,984,311 \$16,783,763 4,216,055 \$1,848,709 \*  
 Value not given. † No value given on 23,380 bushels. ‡ No bushels or value given. 190

Statistics concerning Agricultural Production of Wisconsin—

Counties. Barley. Hay. Potatoes. Brans and Peas. Apples. Acres. Bushels. Value. Tons.  
 Value. Acres. Bushels. Value. Bushels. Value. Bushels. Value. Bushels. Value. Adams 33 525 \$219  
 14,723 \$73,290 6,535 177,309 \$61,978 938 \$1,318 626 \$393 Ashland 12 208 118 3,273  
 34,654 418 32,013 17,163 1,351 834 3 8 Barron 232 3,013 1,397 21,349 175,924 3,164  
 151,002 62,722 1,722 2,400 47 48 Bayfield 669 6,063 104 7,700 3543 118 149 Brown

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3,029 65,604 31,351 45,986 321,512 3,836 173,588 75,568 48,566 26,481 5,507 3,002  
Buffalo 5,292 138,032 30,410 37,405 188,274 1,697 78,868 89,217 267 450 1,904  
1,348 Burnett 14 204 77 10,613 55,263 3,166 124,666 39,807 889 1,422 3 4 Calumet  
23,173 769,974 355,925 27,740 201,323 997 42,031 26,256 14,166 8,789 11,511 5,682  
Chippewa 1,631 76,430 11,748 28,826 271,760 3,810 161,782 82,188 2,241 2,675 847  
929 Clerk 372 7,688 3,739 42,802 299,894 2,064 116,333 51,013 55,205 33,326 157 135  
Columbia 14,916 405,927 179,221 74,990 236,607 7,193 392,490 178,549 9,842 12,352  
11,504 5,593 Crawford 523 9,885 4,248 22,460 120,063 1,200 64,013 34,516 10,299  
8,790 21,861 7,800 Dane 14,422 409,901 189,667 141,764 707,246 3,848 222,912  
124,001 2,380 3,268 32,469 15,228 Dodge 93,662 2,758,702 1,391,327 106,566 600,904  
3,566 175,100 85,391 1,279 1,571 20,414 9,080 Door 1,058 20,480 8,982 23,382 165,159  
2,124 143,910 61,704 85,723 61,748 8,219 4,033 Douglas 1 48 28 650 5,631 154 13,374  
9,635 20 30 Dunn 2,138 37,969 15,488 35,709 233,323 3,898 159,486 70,720 3,151  
4,320 594 610 Eau Claire 2,708 69,242 31,423 30,628 204,762 2,495 124,040 51,079  
1,466 2,337 637 631 Florence 826 7,702 138 13,765 4,800 Fond du Lac 56,529 1,765,548  
834,283 87,024 490,453 4,155 249,556 118,823 2,818 2,802 42,392 20,394 Forest 28 870  
420 341 2,539 115 17,825 8,172 1,550 765 Grant 755 14,333 6,411 69,520 427,724 3,046  
174,980 106,668 47,729 44,942 52,959 20,997 Green 404 10,513 4,934 67,342 445,247  
1,006 53,063 31,211 124 195 38,286 14,687 Green Lake 6,137 174,541 83,596 33,495  
144,707 1,744 83,435 33,668 5,753 8,335 1,935 1,229 Iowa 313 7,553 3,354 79,964  
436,615 1,417 71,322 86,733 1,602 1,365 18,712 6,640 Iron 6 95 75 495 5,245 117 9,016  
5,513 60 98 Jackson 782 14,250 6,048 25,974 150,191 1,476 70,103 29,365 2,200 1,739  
463 235 Jefferson 14,421 448,978 226,197 71,587 451,770 1,953 111,458 60,176 2,264  
1,650 49,238 19,036 Juneau 362 6,824 3,109 23,012 128,327 4,691 177,286 96,043  
3,867 2,908 3,889 2,138 Kenosha 1,199 29,403 14,114 51,723 311,683 1,262 95,865  
43,792 216 365 12,853 5,879 Kewaunee 3,086 67,555 28,518 27,959 165,976 2,609  
72,690 32,362 147,964 92,148 7,562 3,982 La Crosse 3,851 99,956 47,862 34,293  
197,317 1,733 119,747 59,931 562 723 3,064 1,794 Lafayette 169 8,687 1,595 58,393  
350,833 1,102 58,408 42,078 811 858 12,995 6,035 Langlade 313 6,106 2,710 5,415  
59,060 706 59,056 28,729 7,134 5,019 47 46 Lincoln 17 274 135 2,817 28,476 453 36,025  
20,399 3,132 2,779 Manitowee 15,362 376,805 189,062 58,207 422,676 2,507 120,884  
58,510 207,843 138,855 33,757 16,853 191 Marathon 1,669 34,444 \$16,256 29,914  
\$264,705 3,265 216,812 \$106,144 59,611 \$33,146 468 \$328 Marinette 108 2,495 1,088  
10,596 73,826 1,499 127,611 67,596 8,951 5,476 653 333 Marquette 24 715 307 29,085  
108,558 3,412 125,279 51,011 11,427 16,908 2,779 1,58 Milwaukee 4,120 135,709  
68,840 88,966 852,284 4,748 295,589 184,131 1,591 1,290 51,533 27,518 Monroe 3,055



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31,848 82,881 40,369 237,426 3,448 177,365 78,284 2,200 2,179 4,001 2,672 Oconto  
289 5,044 2,942 19,419 153,217 1,704 104,560 51,338 24,988 15,496 2,541 1,927  
Oneida 15 160 320 884 249 20 20 Outagamie 6,259 188,417 90,596 41,311 295,688  
3,588 210,455 102,213 31,646 18,465 10,260 5,606 Ozaukee 20,091 574,787 291,005  
33,065 261,984 2,182 118,217 67,425 6,779 4,857 52,852 20,748 Pepin 4,454 115,516  
53,625 9,304 55,341 592 21,631 10,739 262 403 237 167 Pierce 20,660 542,391 251,452  
32,561 205,090 2,266 115,327 55,344 1,417 1,613 487 349 Polk 1,644 16,889 6,458  
24,104 174,033 8,092 107,818 41,181 1,066 1,700 33 32 Portage 141 2,301 1,209 19,729  
154,155 25,049 1,083,414 426,146 2,482 2,896 968 768 Price 7 94 45 2,533 28,924 378  
32,625 17,006 404 548 2 1 Racine 2,885 84,351 39,950 61,217 405,710 2,508 168,534  
87,464 285 435 30,507 13,696 Richland 161 3,953 1,865 38,578 205,502 1,050 63,520  
33,819 5,496 3,880 21,888 9,142 Rock 18,578 494,909 242,568 73,420 444,865 2,479  
131,231 71,967 806 1,295 45,069 16,292 St. Croix 3,711 73,555 31,278 34,182 243,190  
3,643 142,903 57,440 1,722 1,982 46 41 Sauk 446 12,158 5,205 55,519 301,546 5,039  
252,181 111,719 25,200 17,132 19,631 8,627 Sawyer \* 905 12,621 127 8,938 8,693 516  
749 Shawano 1,748 33,885 16,166 21,273 162,945 2,409 154,036 68,633 53,613 28,571  
4,371 2,316 Sheboygan 28,181 330,436 412,234 61,662 487,584 2,876 162,771 83,478  
26,721 20,683 99,950 25,524 Taylor 47 915 422 6,550 60,262 722 55,215 29,721 5,686  
4,787 2 1 Trempealeau 1,721 47,012 19,850 53,105 310,916 1,974 85,670 41,880 257  
549 1,032 865 Vernon 4,587 107,827 47,228 42,601 241,566 2,414 169,804 80,877 5,918  
5,304 18,267 8,186 Vilas 608 7,092 134 2,000 1,794 Walworth 16,970 466,772 222,891  
87,746 523,626 1,835 109,352 70,082 923 1,364 40,091 14,753 Washburn 1,552 9,316  
231 7,907 4,311 27 45 ½ 1 Washington 40,885 1,177,513 583,889 36,557 325,082 2,246  
127,240 71,486 2,077 1,451 52,691 17,957 Waukesha 24,164 677,398 239,420 69,569  
550,739 4,288 281,163 156,815 934 782 61749 23,951 Waupaca 796 17,300 7,599  
25,582 258,437 19,391 986,421 468,724 4,461 4,059 7,902 4,626 Waushara 40 1,110  
484 92,663 158,804 19,876 919,843 558,840 14,577 20,773 3,321 1,925 Winnebago  
7,847 218,498 102,772 67,889 388,107 3,421 162,493 81,779 5,030 3,812 12,062 7,764  
Wood 293 5,829 2,727 20,987 144,182 2,458 78,528 33,776 15,770 8,621 239 227 Total  
481,850 13,704,889 \$6,630,273 2,507,863 \$15,848,616 215,027 10,755,788 \$5,070,937  
995,214 \$707,423 940,177½ \$402,482 192

LRBMr'18

Views in Stevens Point, Portage county. This city, with a population of 8,995, is maintained through its lumber and paper manufacturing interests and the shops of the Wisconsin

## Library of Congress

Central Railway. The rapids of the Wisconsin river generate from 10,000 to 15,000 H. P. at this point. One of the state normal schools is located here. Our view shows the rapids of the Wisconsin outside the city, the city waterworks, business block, and workmen paving one of the business streets.